Roofing Applicator Handbook
Introduction

Welcome to Sika Sarnafil’s Roofing Applicator Handbook. This pocket guide is intended to serve as a quick “on the roof” reference to the techniques used when installing Sarnafil and Sikaplan membranes. This pocket guide contains the latest information for continued success in installing Sika Sarnafil roof systems.

As an authorized Sika Sarnafil applicator, you have committed to uphold Sika Sarnafil’s high standards during the installation of our roofing and waterproofing systems. Our goal is to help you provide the building owner with a high quality installation.

As a leader in thermoplastic roofing systems, Sika Sarnafil has manufactured billions of square feet of roofing and waterproofing membrane since 1964. Sika Sarnafil roofing systems can be found on many well known facilities including numerous stadiums, schools, libraries, museums, hospitals, retail establishments and commercial buildings.

Sika Sarnafil is committed to provide you with the finest roofing and waterproofing products available and spares no effort in helping you achieve a quality installation.
## Contents

*Introduction*  
*Office Locations*  
*Tools & Equipment*  
Hot-Air Welding Equipment – Hand Tools  
Hot-Air Welding Equipment – Automatic Welder  
Hot-Air Welding Equipment – Welding Kits  
Generator  
*Materials*  
Check List  
Product Delivery, Storage, and Handling  
Job Conditions  
*Welding*  
Hot-Air Welding of Lap Areas  
Machine Welding  
Special Recommendations  
*Typical Flashing Procedures*  
General  
How to Flash an Outside Corner  
How to Flash an Inside Corner  
How to Flash a Curb  
How to Flash a Canted Curb  
How to Flash a Vent Stack  
How to Flash a Conical Stack  
How to Flash a Clamping Ring Drain  
*Insulation Attachment*  
Calculating Perimeter and Corner Securement for all Systems  
Insulation Mechanically Attached  
Insulation Installation  
Insulation Adhesive  
*Mechanically Attached Systems*  
Sarnafast / Sikaplan System  
Express System  
FM and Non-FM Half Sheet Layouts for Sarnafast and Express  
Engineered System  
*RhinoBond System*  
Introduction  
RhinoBond Tool Calibration  
RhinoBond Systems  
Metal Retrofit  
Grid System  
*Adhered System*  
Adhered System – Bareback Membrane  
Sarnacol 2170 / 2170 VC Adhesive  
Sarnacol 2121 Adhesive  
Sarnacol 2166 Adhesive  
AST Spray Machine Installation  
Drop Cart Installation  
Adhered System - Feltbacked Membrane  
Sarnacol 2170 / 2170 VC Adhesive  
Sarnacol 2121 Adhesive
## Contents

**Peel & Stick System**  
Peel & Stick System Installation 66

**Décor Roof Systems**  
Introduction 69  
General 70  
Working on Slopes 70  
Roof Substrates 70  
Insulation Installation 70  
Sarnafil Membrane Installation 71  
Adhesive Application 71  
Welding Membrane 72  
Décor Rib Options 73  
  Décor Profile 73  
  Décor Batten 32  
Preparation for Installation 73  
  Décor Profile 74  
  Décor Batten 75  
Rib Spacing Layout 76  
Décor Rib Installation 78  
  Automatic Welder 79  
  Hand Welder 80  
Rib Finishing 81  
Flashing 82  
Patching 84  
Cleaners 84  
Snow Guards 84  
Edge Metal 85  
Night Tie In 86

**Walkway Installation**

**Typical Roof Details**  
Membrane Termination at Wall 88  
Flashing Details 91  
Metal Flashings 111  
Sarnaclad Metal Base Flashings 111  
Sarnaclad Metal Edge 112  
Miscellaneous Metal Flashings 113  
Edge-Grip / Edge Grip Extruded Fascia 114  
Wall Grip Coping 115

**Overnight Tie-In**  
Tearing Off Existing Built-Up Roofing 116

**Special Instructions**  
Cleaning Sika Sarnafil Membrane 118  
Welding Sika Sarnafil Membranes Greater Than 0.06 inches (60 mils) 119  
Welding to Aged Sarnafil Membrane 119  
Problem/Solution Q & A 120  
General 120  
Adhered and Décor Systems 121

**Measures to Eliminate Blistering** 122

**General Information** 123

**Disclaimer** 124
### REGIONAL OFFICES

<table>
<thead>
<tr>
<th>REGION</th>
<th>Phone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NEW ENGLAND REGION</strong></td>
<td>(800)768-1940</td>
<td>(781)821-9205</td>
</tr>
<tr>
<td><strong>SOUTHWEST REGION</strong></td>
<td>(713)812-0102</td>
<td>(713)812-0107</td>
</tr>
<tr>
<td><strong>EASTERN REGION</strong></td>
<td>(800)782-3859</td>
<td>(201)327-4069</td>
</tr>
<tr>
<td><strong>NORTHWEST REGION</strong></td>
<td>(800)727-6234</td>
<td>(253)872-0273</td>
</tr>
<tr>
<td><strong>SOUTHEAST REGION</strong></td>
<td>(800)443-0223</td>
<td>(770)495-0027</td>
</tr>
<tr>
<td><strong>MOUNTAIN REGION</strong></td>
<td>(800)575-8648</td>
<td>(801)355-4407</td>
</tr>
<tr>
<td><strong>MIDWEST REGION</strong></td>
<td>(800)532-5123</td>
<td>(815)838-1722</td>
</tr>
<tr>
<td><strong>WESTERN REGION</strong></td>
<td>(800)421-1662</td>
<td>(714)821-9356</td>
</tr>
<tr>
<td><strong>CANADA</strong></td>
<td>(800)268-0479</td>
<td>(905)670-5278</td>
</tr>
<tr>
<td><strong>CORPORATE OFFICE</strong></td>
<td>(800)451-2504</td>
<td>(781)828-5365</td>
</tr>
</tbody>
</table>

**WEB ADDRESS:**  
www.sikacorp.com

**EMAIL ADDRESS:**  
webmaster.sarnafilus@us.sika.com
Hand welder:
Leister Triac hand welder with 0-10 heat settings ¾ in. (20 mm) nozzle 1 ½ in. (40 mm) nozzle 5 mm nozzle with PVC cord attachment

Hand welding accessories:
Silicone rubber hand roller

Note:
Only welding equipment supplied or accepted by Sika Sarnafil should be used.

Automatic Welder
The Sika Sarnafil Sarnamatic hot-air welder was developed and is supplied by Sika Sarnafil. It is specifically designed for use with Sika Sarnafil membranes.

The speed, air flow and welding temperature of the Sarnamatic can be adjusted to accommodate changes in ambient temperature.

Each Sarnamatic unit comes packed in a sturdy box, complete with detailed operating and maintenance instructions.

Technical Description as Manufactured
Power requirements: 230-volt, 30-ampere, single-phase current.

Extension cord: Use 2.5mm² (14AWG) 3-conductor type cord, 50 ft. (15m) length. For longer distances, consult an electrical contractor.

Adjustment tools (supplied): Phillips screwdriver, open-end and allen wrenches.
Sika Sarnafil Patented Double Weld Kit
The Sika Sarnafil Double Weld Kit was developed and is supplied by Sika Sarnafil. It is specifically designed to be used with the Express System.

The double weld kit has a specially designed nozzle that will create two welds on either side of the Sarnarail. The outside "weather" weld is approximately 1¼ in. (32 mm) wide while the inside weld is approximately ¾ in. (19 mm) wide.

Sika Sarnafil Patented Décor Profile and Batten Kits
Sika Sarnafil Décor Kits were developed and are supplied by Sika Sarnafil. They are specifically designed to heat weld Sarnafil Décor Profiles Battens to the Sika Sarnafil Roof Membrane.

The specially designed compression wheel allows for continuous, consistent heat and pressure to be applied to Décor Ribs and Sarnafil Membrane.
Tools & Equipment
Generator

Packaging and Storage
Each machine is shipped in its own packing case. The machine should be stored in the case and kept dry.

Precautions
Run machine on the cooling setting for at least 5 minutes before turning it off to prevent damage to the ceramic heating element. Avoid power interruptions or power surges. Always check the condition of the power cord and all connectors prior to connecting the power. Never use electrical equipment under wet conditions. Sika Sarnafil recommends the use of a portable generator.

Generator
When a generator is required for running the Sarnamatic welder it should be a minimum of 7,500 watts, 30 amps, 230 volts single phase. The generator or power source should be dedicated to the Sarnamatic machine. Running additional equipment from the generator during operation of the Sarnamatic may result in inconsistent welds.
# Materials Checklist

<table>
<thead>
<tr>
<th>Material</th>
<th>Use</th>
<th>Mech. Attach.</th>
<th>Adhered</th>
<th>Decor</th>
<th>Flashings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Membranes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarnafil S327</td>
<td>Deck sheet</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Sarnafil S327 Feltback</td>
<td>Deck sheet</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Sarnafil S327</td>
<td>Half sheets, Perimeter sheets</td>
<td></td>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Sarnafil G410</td>
<td>Deck sheet</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Sarnafil G410 Feltback</td>
<td>Deck sheet</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Sarnafil G459</td>
<td>Asphalt resistant flashing sheet, Drains, Tie-Ins</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sikaplan</td>
<td>Deck Sheet</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Sikaplan Feltback</td>
<td>Deck Sheet</td>
<td></td>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td><strong>Adhesives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarnacol 2170 – Solvent Based</td>
<td>Adhering deck sheet</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Sarnacol 2170 VOC Compliant</td>
<td>Adhering deck sheet</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Sarnacol 2121 - Water Based</td>
<td>Adhering deck sheet to water absorbptive substrates</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Sarnacol LR-2001 – Urethane Based</td>
<td>Adhering Feltback sheet and insulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OlyBond 500 – Urethane Based</td>
<td>Adhering insulation to approved decks</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Millennium – Urethane Based</td>
<td>Adhering insulation to approved decks</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Sarnacol 2166 – Urethane Based</td>
<td>Bare back membrane</td>
<td></td>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>StaBond – Solvent Based</td>
<td>Adhering flashings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarnacol 2163 – Urethane Based</td>
<td>Adhering insulation to approved decks</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

* Requires special procedures. Contact Sika Sarnafil Technical Department.
<table>
<thead>
<tr>
<th>Material</th>
<th>Use</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fastening Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarnafasteners</td>
<td>Securing membrane and insulation to approved decks</td>
<td>• • •</td>
</tr>
<tr>
<td>Samaplates</td>
<td>Plates for insulation attachment</td>
<td>• • •</td>
</tr>
<tr>
<td>Samadiscs</td>
<td>Plates for membrane attachment</td>
<td>• • •</td>
</tr>
<tr>
<td>Samabar</td>
<td>Bar for membrane attachment (Engineered System)</td>
<td>•</td>
</tr>
<tr>
<td>Samarail</td>
<td>Batten strip for membrane attachment (Express System)</td>
<td>•</td>
</tr>
<tr>
<td>Samastop</td>
<td>Perimeter Securement of membrane (Adhered System)</td>
<td>• •</td>
</tr>
<tr>
<td>Underlayments / Separators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarnatherm Insulation</td>
<td>Isocyanurate insulation for use in System Warranties</td>
<td>• • •</td>
</tr>
<tr>
<td>Sarnatherm EPS</td>
<td>Expanded Polystyrene Insulation for use in System Warranties (not to be used with 2170)</td>
<td>• • •</td>
</tr>
<tr>
<td>Sarnatherm XPS</td>
<td>Expanded Polystyrene Insulation for use in System Warranties (not to be used with 2170)</td>
<td>• • •</td>
</tr>
<tr>
<td>Sarnatherm FanFold</td>
<td>Expanded Polystyrene Insulation for Recover Applications</td>
<td>•</td>
</tr>
<tr>
<td>Sarnafelt</td>
<td>Slip sheet or contamination barrier</td>
<td>•</td>
</tr>
<tr>
<td>Samavap-10</td>
<td>Vapor/air retarder sheet</td>
<td>• • •</td>
</tr>
<tr>
<td>Samavap SA</td>
<td>Self Adhered Vapor Barrier</td>
<td>• • •</td>
</tr>
<tr>
<td>Dens Deck</td>
<td>Hardboard/Coverboard</td>
<td>•</td>
</tr>
<tr>
<td>Dens Deck Prime</td>
<td>Hardboard/Coverboard</td>
<td>• •</td>
</tr>
<tr>
<td>Material</td>
<td>Use</td>
<td>System</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarnaclad Metal</td>
<td>PVC coated metal for flashing</td>
<td>•</td>
</tr>
<tr>
<td>Sarnareglet</td>
<td>Heavy duty termination bar</td>
<td>•</td>
</tr>
<tr>
<td>Sarnaflash Expansion Joint</td>
<td>Prefabricated expansion joint</td>
<td>•</td>
</tr>
<tr>
<td>Sarnastack</td>
<td>Prefabricated Pipe Flashing</td>
<td>•</td>
</tr>
<tr>
<td>Open Post Flashing</td>
<td>Prefabricated Pipe Flashing</td>
<td>•</td>
</tr>
<tr>
<td>Sarnacorner</td>
<td>Prefabricated corner patch for curbs and walls</td>
<td>•</td>
</tr>
<tr>
<td>Sarnadrain-RAC</td>
<td>Drain insert with PVC coated flange</td>
<td>•</td>
</tr>
<tr>
<td>Sikaflex 1A</td>
<td>Sealant compatible with Sarnafil membrane</td>
<td>•</td>
</tr>
<tr>
<td>Multi-Purpose Tape</td>
<td>Reduces air and moisture infiltration at roof edge</td>
<td>•</td>
</tr>
<tr>
<td>Sarnafiller</td>
<td>Pitch pocket filler</td>
<td>•</td>
</tr>
<tr>
<td>Aluminum Tape</td>
<td>Asphalt barrier on vent pipes</td>
<td>•</td>
</tr>
<tr>
<td>Sarnasolv</td>
<td>Solvent used for removing contamination from membrane</td>
<td>•</td>
</tr>
<tr>
<td>Sarnacord-PVC</td>
<td>Used at the base of walls and curbs with Sarnabar</td>
<td>•</td>
</tr>
<tr>
<td>SarnaTred</td>
<td>Sarnafil membrane rolled walkway</td>
<td>•</td>
</tr>
<tr>
<td>Sand Coated Walkway</td>
<td>Sarnafil membrane sand coated walkway</td>
<td>•</td>
</tr>
<tr>
<td>Crossgrip</td>
<td>Walkway</td>
<td>•</td>
</tr>
<tr>
<td>Décor Profile</td>
<td>Small aesthetic rib for metal deck appearance</td>
<td></td>
</tr>
<tr>
<td>Décor Batten</td>
<td>Large aesthetic rib for metal deck appearance</td>
<td></td>
</tr>
<tr>
<td>Roller Frame</td>
<td>Adhesive applicator</td>
<td>•</td>
</tr>
<tr>
<td>Roller Cover</td>
<td>Adhesive roller</td>
<td>•</td>
</tr>
<tr>
<td><strong>Non-Sarnafil Materials</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood Nailers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plywood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sheet Metal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Misc. Fasteners &amp; Anchors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. All products delivered to the job site shall be in the original unopened containers or wrappings.

2. Handle all materials to prevent damage. Place all materials on pallets, and fully protect from moisture with clean canvas tarpaulins.

3. Membrane rolls shall be stored lying down on pallets, and fully protected from moisture with clean canvas tarpaulins.

4. Insulation and coverboards shall be stored and fully protected from moisture with clean canvas tarpaulins.

5. Bonding adhesives shall be stored at temperatures above 40°F (4°C).

6. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers and supplied by material manufacturer supplier.

7. Any materials that are determined by the owner’s representative and Sika Sarnafil to be damaged are to be removed from the job site and replaced at no cost to the owner.
Materials
Job Conditions

1. Only as much of the new roofing as can be made weathertight each day, including all flashing and detail work, shall be installed. All seams shall be properly heat-welded before leaving the job site that day.

2. The surface of the insulation shall be inspected prior to installation of the Sika Sarnafil roof membrane. The substrate shall be clean, dry, free from debris and smooth with no surface roughness or contamination. Broken, delaminated, wet, or damaged insulation boards shall be removed and replaced.

3. All surfaces to receive new insulation, membrane, or flashings shall be clean, smooth, dry, and free from flaws, sharp edges, loose foreign material, oil, and grease. Should surface moisture occur, the contractor shall provide the necessary equipment to dry the surface prior to application. Roofing shall not start until all defects have been corrected.

4. Uninterrupted waterstops shall be installed at the end of each day’s work, and shall be completely removed before proceeding with the next day’s work. Waterstops shall not remain in contact with the finished roof as the installation progresses. Contaminated membrane shall be replaced at no cost to the owner.

5. The contractor is cautioned that certain Sika Sarnafil membranes are incompatible with polystyrene, asphalt, coal tar, heavy oils, roofing cements, creosote and some preservative materials. Such materials shall not remain in contact with Sika Sarnafil membranes. The Contractor shall consult Sika Sarnafil regarding compatibility, precautions, and recommendations.

6. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, the Contractor shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A substantial protection layer consisting of plywood over insulation board shall be provided for new and existing roof areas which receive rooftop traffic during construction.

7. The Contractor shall take precautions that storage and/or application of materials and/or equipment does not overload the roof deck or building structure.

8. Installation of a Sika Sarnafil membrane over coal tar pitch, or a resaturated roof, requires special consideration to protect the Sika Sarnafil membrane from volatile fumes and materials. Consult Sika Sarnafil for precautions prior to bid.

9. Flammable adhesives shall not be stored and shall not be used in the vicinity of open flames, sparks and excessive heat.

10. Precautions shall be taken when using Sarnacol adhesives at or near rooftop vents or air intakes. Adhesive odors could enter the building. Coordinate the operation of vents and air intakes in such a manner as to avoid the intake of adhesive odor while ventilating the building. Keep lids on unused cans at all times. Wherever possible, air intakes should be sealed off during adhesive application.

11. Appropriate protective wear shall be worn when using solvents or adhesives or as required by job conditions.

12. Workers shall follow OSHA safety procedures.
A. General
1. All side and end lap joints shall be hot-air welded. Lap area shall be a minimum of 3 in. (77 mm) wide when machine welding, and a minimum of 4 in. (102 mm) wide when hand welding.

2. All mechanics shall have successfully completed a course of instruction provided by a Sika Sarnafil representative prior to welding.

3. All surfaces to be welded shall be clean and dry. No adhesives shall be present within the lap areas.

B. Hand Welding
Hand welded seams shall be completed in two stages. Equipment shall be allowed to warm up for at least one minute prior to the start of welding.

1. The back edge of the lap shall be welded with a thin, continuous pre-weld to prevent the loss of hot air during the final welding. Tack welding not permitted on field sheets.

2. The nozzle shall be inserted into the seam at a 45° angle to the edge of the membrane. Once the proper welding temperature has been reached and the membrane begins to “flow”, the hand roller is positioned perpendicular to the nozzle and pressed lightly. For straight seams, the 1-½ in. (40 mm) wide nozzle is recommended for use. For corners and compound connections, the ¾ in. (20 mm) wide nozzle shall be used.
A. Sarnamatic Welding

1. Machine welded seams are achieved by the use of Sika Sarnafil’s Sarnamatic. When using this equipment, Sika Sarnafil’s instructions shall be followed and local codes for electric supply, grounding, etc. observed. Dedicated circuit house power or a dedicated portable generator is required. No other equipment shall be operated off the generator.

2. **Never tack weld membranes prior to machine welding.**

3. Metal tracks may be used over the deck membrane and under the machine welder to minimize or eliminate wrinkles. With the Sarnafil Express System, it is recommended to weld overlapping membrane prior to securing the opposing side of membrane to prevent wrinkles.

4. Sarnafast/Express system – weight, 2 x 8 in. (51 x 203 mm) wood nailers or metal tracks may be laid on the top sheet approximately 4 in. (102 mm) past the edge of the seam to prevent wrinkles in the sheets while welding to hold in place on windy days. **Tack welding of sheets is not an accepted method for holding sheets in place prior to machine welding.**
Quality control of Welded Seams
All completed welded seams shall be checked after cooling for continuity using a rounded flat head screw driver or other suitable blunt object by the roofing contractor. Visible evidence that welding is proceeding acceptably is smoke during the welding operation, shiny membrane surfaces, and an uninterrupted flow of gray material from the edge of completed welds. On-site evaluation of welded seams shall be made daily by the contractor. Two inch (51 mm) wide cross-sectional samples shall be taken a minimum of three times a day. Correct welds display failure from shearing of the membrane prior to separation of the weld. Each test cut shall be patched by the contractor at no extra charge to the owner. The Contractor shall then check all welded seams for continuity using a rounded screwdriver.
Typical Flashing Procedures
General

This section provides the contractor with a pictorial presentation of the basic procedures for the flashing of common roof penetrations - outside corner, inside corner, curb, canted curb, vent stack, conical stack, and clamping ring drain. The following is a list of guidelines to follow when installing flashings.

1. All flashings shall extend a minimum of 8 in. (203 mm) above roof level unless otherwise accepted in writing by the owner’s representative and Sika Sarnafil Technical Dept.

2. All flashing membranes shall be mechanically fastened along the counter flashed top edge.

3. All details are to be installed concurrently with the remainder of the roofing. No temporary flashings are acceptable unless approved in writing by the owner’s representative and Sika Sarnafil.

Notes:
Acceptance of all detail work by Sika Sarnafil is subject to the following requirements:

1. All detail work is to be completed by Sika Sarnafil-trained and authorized roof mechanics.

2. All detail work must be installed in accordance with Sarnafil-recommended details.

3. If no standard detail applies to a particular field condition, the contractor shall submit a drawing of the proposed detail to the Sika Sarnafil Technical Department for consultation and acceptance.

G410 Membrane Used for Flashings
Sika Sarnafil roofing systems utilize Sarnafil fiberglass-reinforced, G410 membranes for flashings.

Apply a coat of Sarnacol 2170 at a rate of ½ gallons per square (0.61L/M²) onto the existing asphalt flashing, curb, or wall, and allow to dry. Precut Sarnafil G410 flashing membrane to desired dimension. The Sarnafil G410 membrane shall extend 5 in. (127 mm) onto the Sika Sarnafil deck sheet. Apply Sarnacol 2170 to the underside of the G410 flashing at a rate of ½ gallon per square (0.61L/M²). Do not allow any adhesive in overlaps. When the adhesive on the flashing becomes tacky to the touch (DO NOT LET DRY), apply flashing to the previously-coated substrate being careful to avoid wrinkles. The flashing is to be rubbed in with a silicone hand roller to ensure full adhesion.

Sarnafil G459 Flashing
Sarnafil G459 is a fiberglass-reinforced flashing membrane which can be adhered directly to asphalt flashings and asphalt contaminated surfaces.

When adhering directly to smooth asphalt flashings [maximum of 30 in. (762 mm) flashing height], remove all loose or delaminated areas of existing asphalt flashings. Apply a coat of Sarnacol 2170 at a rate of ½ gallons per square (0.61L/M²) onto the existing asphalt flashing, curb, or wall, and allow to dry. Precut Sarnafil G459 flashing membrane to desired dimension. The Sarnafil G459 membrane shall extend 5 in. (127 mm) onto the Sika Sarnafil deck sheet. Apply Sarnacol 2170 to the underside of the G459 flashing at a rate of ½ gallon per square (0.61L/M²). Do not allow any adhesive in overlaps. When the adhesive on the flashing becomes tacky to the touch (DO NOT LET DRY), apply flashing to the previously-coated substrate being careful to avoid wrinkles. The flashing is to be rubbed in with a silicone hand roller to ensure full adhesion.
Typical Flashing Procedures

General

Tie-ins between the Sika Sarnafil roofing membrane and existing asphaltic B.U.R. can be performed with G459 oil and asphalt-resistant membrane. Other types of Sika Sarnafil roofing membranes should not be installed in direct contact with asphalt-contaminated surfaces. Consult Sika Sarnafil when tying into coal tar pitch roofs.

Alternative Flashing Substrates

½ in. (13 mm) GP Dens-Deck®

½ in. (13 mm) minimum A-C exterior grade plywood

24-gauge galvanized metal.

Factory-Prefabricated Flashings

Factory-prefabricated flashings are also available for vents and inside and outside corners.

All adhered flashings that exceed 30 in. (0.75m) in height shall receive additional securement.

Flashing to be Mechanically Attached to Substrates

(to be used only with S327 mechanically attached systems)

Flashings that are not adhered to the substrate shall be mechanically attached 12 in. (305 mm) on center maximum. The distance between the rows of flashing fasteners shall not exceed 18 in. (457mm).

Flashing Overlaps to be Hot-Air Welded

All overlaps of flashing membrane are to be hot-air welded. For this reason, care must be taken during the application of Sarnacol 2170 to avoid contaminating flashing surfaces that are to be hot-air welded.

Terminations

Terminate flashings in accordance with Sika Sarnafil recommended details (see typical details). Flashings are always hot-air welded to the field sheet to ensure permanent, watertight seams.

Sarnafast System

With a mechanically attached Sarnafast system, the installation of Sarnadiscs and Sarnafasteners is required at the base of all walls, curbs, and all penetrations. Fastener spacing is to be the same as for perimeter half sheets, maximum of 12 in. (305 mm) on center (minimum 4 per penetration).

Express System

With a mechanically attached Express System, the installation of a rail or Sarnadiscs and Sarnafasteners is required at the base of all walls, curbs, and all penetrations. Fastener-spacing is to be the same as for the perimeter sheets - maximum 12 in. (305 mm) O.C.

Engineered and Ballasted Systems

With an Engineered or Ballasted System, the installation of a Sarnabar and cord is required at the base of walls, curbs, and penetrations. Fastener spacing is to be according to Sika Sarnafil calculations.
Typical Flashing Procedures
General

Adhered Systems
On these systems, the installation of a Sarnastop bar fastened 12 in. (305 mm) on center is required at the base of walls, curbs, and transition points on the roof deck. When insulation is adhered to the substrate, additional Sarnastop bars may be required. Contact Sika Sarnafil Technical Department.

Detail Work
1. All detail work is to be completed by Sika Sarnafil-trained and authorized roof mechanics.
2. All detail work must be installed in accordance with Sika Sarnafil-recommended details.
3. If no standard detail applies to a particular field condition, the contractor shall submit a drawing of the proposed detail to the Sika Sarnafil Technical Department for consultation and acceptance.

For Further Information
Should you require additional information, please remember that Sika Sarnafil’s in-house regional technical assistance and training services are available from your regional office. Their purpose is to answer your questions and to provide any other technical information - including application techniques - that you may need to know to install Sika Sarnafil roofing systems.

We are here to serve your professional needs. Please contact us if you wish to arrange for a training session or an inspection for standard or system warranties.
Special Note: The following flashing details refer to Sarnafil G410, S327 and Sikaplan Membranes. For Ballasted applications use Sarnafil “T” Membrane and Sarnacol T660 for flashings.

1. Install Sarnafil field sheet tight to curb or wall.

Notes:
   a. In the Mechanically-Attached Sarnafast System install Sarnadisc at base of curb or wall.
   b. In the Mechanically-Attached Express System use either Sarnadisc or Sarnarail at base of curb or wall.
   c. In a Mechanically-Attached (Engineered), or Ballasted System, install Sarnabar and cord at base of curb or wall.
   d. In an Adhered System, install Sarnastop at base of curb or wall and fasten 12 in. (305 mm) on center.

2. Coat the curb or wall with Sarnacol 2170 adhesive. Allow adhesive to dry.

3. Cut flashing from Sarnafil G410 membrane in workable lengths. For the height of the flashing membrane, allow 5 in. (127 mm) more than the height of the curb or wall to overlap onto the Sarnafil field sheet.

4. Coat the underside of the precut flashing with Sarnacol 2170 adhesive. **Do not allow adhesive in areas that will be hot air welded.** Install flashings when adhesive strings to finger touch. Set Sarnafil flashing in place. Overlap previous flashing sheet by 4 in. (102 mm). Keep top edge of flashing level with termination line. **Do not allow flashing membrane to bridge at base of curb or wall.**

5. Cut the flashing square at the base of the curb or wall and wrap it around the corner. Rub in flashings with a silicone hand roller to ensure full adhesion.
6. Hot-air weld all overlaps.

7. Cut oversize patch from Sarnafil G410 membrane; cut rounded corners. Enlarge one of the corners by heating and flanging it so that it will extend over the base of the outside corner (this step may be replaced by using a Sarnacorner).

8. Trim the patch so that it extends neatly past the outside corner and overlaps the flashing a minimum of ¾ in. (20 mm) in all directions (this step is not needed if Sarnacorner is being used).

9. Hot-air weld the corner patch in place.

10. After welds are thoroughly cooled, check all welds with a rounded screwdriver blade. Reweld any inconsistencies.
Typical Flashing Procedures
How To Flash An Inside Corner

1. Install Sika Sarnafil field sheet tight to curb or wall.

   Notes:
   a. In the Mechanically-Attached Sarnafast System install Sarnadisc at base of curb or wall.
   b. In the Mechanically-Attached Express System use either Sarnadisc or Sarnarail at base of curb or wall.
   c. In a Mechanically-Attached (Engineered), or Ballasted System, install Sarnabar and cord at base of curb or wall.
   d. In an Adhered System, install Sarnastop at base of curb or wall and fasten 12 in. (305 mm) on center.

2. Coat the curb or wall with Sarnacol 2170 adhesive. Allow adhesive to dry.

3. Cut flashing from Sarnafil G410 membrane in workable lengths. For the height of the flashing membrane, allow 5 in. (127 mm) more than the height of the curb or wall to overlap onto the Sarnafil field sheet.

4. Coat the underside of the precut Sarnafil flashing with Sarnacol 2170 adhesive. **Do not allow adhesive in areas that will be hot air welded.** Install flashings when adhesive strings on finger touch. Set Sarnafil flashing in place. Overlap previous flashing sheet by 4 in. (102 mm). Keep top edge of flashing level with termination line. **Do not allow flashing membrane to bridge at base of curb or wall.**

5. Form in inverted “V” or “pig’s ear” into the base of the corner. Press flashing into base of corner. Fold excess material underneath itself to form an angle of 45° from the corner. Crease the membrane in this position. Rub in flashings with a silicone hand roller to ensure full adhesion.
Typical Flashing Procedures
How To Flash An Inside Corner

6. Trace a line along the crease onto the lower flashing sheet (shown as line A). Continue line into the corner.

7. Draw a line over the 45° crease (shown as line B). Stop line B, 2 in. (51 mm) from corner.

8. Lift the inverted “V” to expose excess material. Draw a line parallel to and 1 in. (25 mm) from line A (shown as line C). Stop line C 2 in. from the corner.

9. Connect the ends of line B and line C with short black line D.

10. Cut away excess material outlined by lines B, C, and D.

11. Insert hot-air welder nozzle into fold and pinch-weld uncut 2 in. (51 mm) corner flap, fusing membrane underside together, gray surface to gray surface.

Note:
As an alternate detail steps 6 thru 10 can be replaced by welding the “pig ear” closed and securing the “pig ear” to the vertical surface only by hot-air welding.

Special Note: Use Sika Sarnafil Inside Corners wherever possible
12. Weld lower lap to field sheet.
13. Start corner weld; heat up the inner most part of the fold and press with a roll of the finger to fuse top surface to top surface.
14. Finish hot-air weld with hand roller from the corner outward. Complete the welding of overlaps.
15. After welds are thoroughly cooled, check all welds with a rounded screwdriver blade. Reweld any inconsistencies.
Typical Flashing Procedures
How To Flash A Curb

1. Install Sika Sarnafil field sheet tight to curb or wall.

Notes:
- a. In the Mechanically-Attached Sarnafast System install Sarna-disc at base of curb or wall.
- b. In the Mechanically-Attached Express System use either Sarnadisc or Sarnarail at base of curb or wall.
- c. In a Mechanically-Attached (Engineered), or Ballasted System, install Sarnabar and cord at base of curb or wall.
- d. In an Adhered System, install Sarnastop at base of curb or wall and fasten 12 in. (305 mm) on center.

2. Coat the curb or wall with Sarnacol 2170 adhesive. Allow adhesive to dry.

3. Cut two flashings the width “C” of the curb from Sarnafil G410 membrane. Allow enough material (dimension “*”) to run the flashing up and turn inside the curb. Cut flashings for the other two sides, shown as dimension “A”, 10 in. longer than the curb, allowing for an approximate 5 in. (127 mm) wrap on each side.

4. Coat the underside of the two flashings intended to wrap around the corners with Sarnacol 2170 adhesive. Do not allow adhesive in areas that will be hot-air welded.

5. Install flashings when adhesive strings to finger touch. Cut the flashings square at corners, and wrap 5 in. (127 mm) flaps onto sides of the curb.

6. Apply Sarnacol 2170 adhesive to the two remaining flashings. Do not allow adhesive in areas that will be hot-air welded.
7. Install flashing when adhesive strings to finger touch. Rub in flashings with silicone hand rollers to ensure full adhesion. Hot-air weld all overlaps and flashing exteriors.

8. Cut oversize patch from Sarnafil G410 membrane; cut rounded corners. Enlarge one of the corners by heating and flanging it so that it will extend over the base of the outside corner (this step may be replaced by using Sarnacorner).

9. Trim the patch so that it extends neatly past the outside corner and overlaps the flashing a minimum of ¾ in. (20 mm) in all directions weld the corner patch in place.

10. After welds are thoroughly cooled, check all welds with a rounded screwdriver blade. Reweld any inconsistencies.

Special Note: Use Sika Sarnafil Outside Corners wherever possible.
Typical Flashing Procedures
How To Flash A Canted Curb

1. Install Sika Sarnafil field sheet tight to curb or wall.

Notes:
a. In the Mechanically-Attached Sarnafast System install Sarnadisc at base of curb or wall.
b. In the Mechanically-Attached Express System use either Sarnadisc or Sarnarail at base of curb or wall.
c. In a Mechanically-Attached (Engineered), or Ballasted System, install Sarnabar and cord at base of curb or wall.
d. In an Adhered System, install Sarnastop at base of curb or wall and fasten 12 in. (305 mm) on center.

2. Coat the curb or wall with Sarnacol 2170 adhesive. Allow adhesive to dry.

3. From Sarnafil G410 membrane, cut 4 flashings, each 10 in. longer than the dimension of the curb at the base of the cant, allowing for a 5 in. (127 mm) wrap on each side. Allow enough material (dimension “*”) to run the flashing up and turn inside the curb.

4. Coat the underside of the first flashings with Sarnacol 2170 adhesive. Do not allow adhesive in areas that will be hot-air welded. Install flashings when adhesive strings to finger touch.

5. Make cuts on the top and bottom of the cant as show and wrap resulting tapered flaps onto the sides of the curb. Rub in flashings with a silicone hand roller to ensure full adhesion. Repeat this process on the opposite side of the curb.
6. Trim the remaining flashings neatly to match the edge of the curb and cant, outlining thumb tabs to cover corner cuts at the top and bottom of the cant a minimum of ¾ in. (20 mm). Apply moderate heat in order to flange the tabs.

7. Apply Sarnacol 2170 adhesive to the central area of the third flashing as shown. Do not allow adhesive in areas that will be hot-air welded. Install flashings when adhesive strings to finger touch. Rub in flashings with a silicone hand roller to ensure full adhesion.

8. Complete the flashings by hot-air welding all seams and overlaps. Repeat the process on the opposite side of the curb.

9. After welds are thoroughly cooled, check all welds with a rounded screwdriver blade. Reweld any inconsistencies.

10. Finished canted curb detail, showing thumb tabs properly installed.
Typical Flashing Procedures
How To Flash A Vent Stack

1. Cut Sika Sarnafil field sheet tight to the vent stack. From Sarnafil G410 membrane, cut a base plate large enough to provide a 5 in. flange.

Note:
   a. In all systems, install Sarnadisc around the base of the vent stack.

2. Center the base plate over the top of the vent stack and rub the flashing over the end of the vent to make an imprint on the bottom of the material.

3. Cut a hole in the membrane that is ½ in. (13 mm) smaller than the imprinted outside diameter of the stack. Stretch the base plate down over the stack until it is flat on the field sheet, except where it will neck up the base of the stack.
Typical Flashing Procedures
How To Flash A Vent Stack

4. Install a spacing strip that is 1 in. (25 mm) wide and slightly longer than the height of the vent stack loosely to the vent stack as shown. Wrap the vent stack with Sarnafil G410 flashing membrane, allowing for an approximately 1 in. (25 mm) overlap, and hot-air weld the overlap. Flashing membrane shall extend 2 in. (51 mm) above the height of the vent stack.

Note:
   a. Use aluminum tape as a barrier if the vent stack is contaminated.

5. Slide out the spacing strip and remove the now tubular flashing. Flange the bottom of the flashing by applying moderate heat and stretching the membrane, creating a scalloped effect.

6. Slide the flashing, scalloped-end down, back onto the vent. Hot-air weld the scalloped flange to the base plate. Hot-air weld the base plate to the field sheet. Trim the top of the flashing even with the top of the stack.

7. Install a separate piece of Sarnafil G410 membrane so that it extends into the stack (gray side of membrane should be facing out) a minimum of 2 in. (51 mm), tight to the inside diameter of the stack and extending a minimum of 1 in. (25 mm) above the stack. Bend the protruding part of the internal flashing so that it is tight to the external stack flashing. Hot-air weld the overlap.

8. After welds are thoroughly cooled, check all welds with a rounded screwdriver blade. Reweld any inconsistencies.

Special Note:
Use Sika Sarnafil Cone Flashings wherever possible.
1. Cut Sika Sarnafil field sheet tight to the penetration.

Note:
  a. In a Mechanically-Attached, Adhered, or Ballasted System, install Sarnadisc around the base of the vent stack.

2. Measure the height “A”, upper stack diameter “B”, and stack base diameter “C”.

3. Lay out and draw these three dimensions on Sarnafil “G” membrane as shown. Draw center line “A”, whose length is equal to the height of the flashing. At one end of line “A” draw line “B” (equal to small vent diameter) centered over line “A”; at the other end of line “A” draw line “C” (equal to large vent diameter) centered over line “A” as indicated.

4. Connect the lines of “B” and “C” and continue these lines until they intersect. This intersection is reference point “R”.

5. With reference point “R” as the center, draw arc B-B through the end points of line “B” as shown. Then draw arc C-C through the end points of line “C” as shown.

6. Add 1 in. to the radius from center “R” to arc C-C, and draw arc D-D.

7. Measure the circumference of the upper stack. Center this circumference dimension over the center line, and trace it along arc B-B. Draw a dot at each end of the circumference trace.

8. Measure the circumference of the base of the stack. Center this circumference dimension over the center line, and trace it along arc C-C. Draw a dot at each end of the circumference trace.

9. Draw lines from “R” connection the circumference dots on arcs B-B and C-C and extend until they intersect arc D-D. Add 1 in. on one side to allow for overlap.
10. Cut out flashing along arc lines B-B and D-D and along both lines B-D as shown.

11. Flange the bottom of the flashing by applying moderate heat and stretching the membrane, creating a scalloped effect.

12. Wrap the flashing tightly around the stack. Hot-air weld 1 in. (25 mm) minimum overlap.

Note:
   a. Use aluminum tape as a barrier if the vent stack is contaminated.

13. Complete the flashing by hot-air welding a minimum ¾ in. (20 mm) flange to the Sarnafil field sheet.

14. Terminate the flashing with sealant and a stainless steel hose clamp.

15. After welds are thoroughly cooled, check all welds with a rounded screwdriver blade. Reweld any inconsistencies.
1. Install accepted tapered insulation to drain elevation. For Adhered Systems apply Sarnacol 2170 adhesive to the tapered insulation and allow it to dry. Trim the Sarnafil field sheet where tapered insulation starts.

   Note:
   a. Install Sarnadiscs, Sarnarail or Sarnastop at insulation transition.

2. Cut Sarnafil G410 membrane flashing, allowing for a 4 in. (102 mm) overlap onto Sarnafil field sheet. Trim excess membrane at the drain bowl, leaving a minimum of 1 in. (25 mm) of membrane extending into the drain bowl past the clamping ring.

3. For Adhered Systems, coat the underside of the flashing with Sarnacol 2170 adhesive. Do not allow adhesive in areas that will be hot-air welded.
4. Install accepted sealant under flashing membrane at clamping ring and drain flange.

5. Install clamping ring and tighten fasteners.

6. Trim excess membrane in drain, and install strainer onto clamping ring.

7. After welds are thoroughly cooled, check all welds with a rounded screwdriver blade. Reweld any inconsistencies.

Note:
An alternate detail is available. See Sarnadrain-RAC detail in “Typical Details” section.
Insulation Attachment
The roof area is divided into 3 zones; field, perimeter and corner. Additional securement to the roof system is required in the perimeter and corner areas. To calculate the location of the perimeter and corners, multiply the building height by 0.4 or the lesser plan dimension by 0.1. The smaller of the values will be the perimeter zone where the lines cross in the corners designates the corner zones.

Calculating Perimeter + Corner
Insulation Attachment
Mechanically Attached

Insulation shall be installed according to ANOA directions and only on acceptable substrate or air/vapor barrier. All boards shall be installed with tight joints with gaps no more than ¼ in. (6 mm). Minimum of 6 fasteners per board required without vapor retarder.

1. Insulation shall be neatly cut to fit around all penetrations and projections. Install tapered insulation around drains to create sumps.

2. Use at least 2 layers of insulation when total thickness exceeds 2.7 in. (69 mm). Stagger joints in both directions at least 12 in. between layers.

3. Do not install more insulation board that can be covered with Sika Sarnafil membrane by the end of the day, or onset of inclement weather.

Mechanical Attachment

1. Insulation shall be secured to the deck with fasteners and plates, with 1 in. (25.4 mm) penetration of steel, plywood decks and embedment in concrete and wood plank decks.

---

Insulation Fastener Layouts for Mechanically Fastened Systems without Air/Vapor Retarders

Insulation Fastener Layout for Mechanically Fastened Systems with Air/Vapor Retarders

1. Insulation thickness less than 2 in.

2. Insulation thickness 2 in. or greater
Insulation Fastener Layout for Adhered Systems with Air/Vapor Retarders

Note: Number of fasteners to be selected according to system ratings.
Sika Sarnafil Roofing Applicator Handbook

Insulation Attachment

Insulation Adhesive

Sarnacol LR-2001
1. Insulation shall be set in a continuous, even coating of adhesive that is applied to an acceptable substrate or properly attached vapor retarder (see following chart).

2. Allow adhesive to rise 1/8 in. (3 mm) (approximately 1-2 minutes) and set board into adhesive. Walk boards into place to ensure proper embedment. For uneven surfaces it may be necessary to slit boards and apply constant weight until adhesive sets up.

3. Insulation shall be fully bonded to substrate or properly attached vapor retarder.

4. Insulation shall be a maximum of 4x4 ft. (1.2x1.2 m) in size if adhered to substrate.

5. A min. of 1 Sarnastop placed 4 ft. (1.2 m) from the roof edge and fastened 12 in. (305 mm) o.c. to the structural deck with acceptable fasteners is required after installation of the Sarnafil roof membrane. The Sarnastop is to have a cover strip hot air welded over it.

<table>
<thead>
<tr>
<th>SARNACOL LR-2001 APPLICATION RATES FOR INSULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approximate Sq. Ft. (Meter$^2$) per Drum Set</td>
</tr>
<tr>
<td>50 Gal. (189.27 liter) Set</td>
</tr>
<tr>
<td>Concrete</td>
</tr>
<tr>
<td>Smooth Gypsum Plank</td>
</tr>
<tr>
<td>Cellular Concrete (consult Technical Dept.)</td>
</tr>
<tr>
<td>Cementitious Wood Fiber</td>
</tr>
<tr>
<td>Isocyanurate Paper Facer</td>
</tr>
<tr>
<td>Existing Mineral Cap Sheet</td>
</tr>
<tr>
<td>Existing Modified Bitumen</td>
</tr>
<tr>
<td>Existing Smooth B.U.R. (type III or IV)</td>
</tr>
<tr>
<td>Existing S.P.F. (remove coating)</td>
</tr>
</tbody>
</table>

OlyBond 500
1. Insulation is set in ribbons of foam adhesive spaced 12 in. (305 mm) on center. The adhesive shall be applied to acceptable substrate or properly attached vapor retarder at a rate of 1 gallon per square (0.4 L/m$^2$), depending on substrate. Allow the foam to rise ½ to 3/4 in. (13 to 19 mm) and set insulation in the adhesive. Walk boards into place to ensure proper embedment. For uneven surfaces it may be necessary to slit boards and apply constant weight until adhesive sets up.

2. Insulation shall be a maximum of 4x4 ft. (1.2x1.2 m) in size if adhered to substrate.

3. A min. of 1 Sarnastop placed 4 ft. (1.2 m) from the roof edge and fastened 12 in. (305 mm) o.c. to the structural deck with acceptable fasteners is required after installation of the Sarnafil roof membrane. The Sarnastop is to have a cover strip hot air welded over it.
Insulation Attachment

Insulation Adhesive

Sarnacol 2163
1. Insulation is set in ribbons of foam adhesive spaced 12 in. (305 mm) on center. The adhesive shall be applied to acceptable substrate or vapor retarder at a rate of 600 sq. ft. (55.7 m²) per box (4 – 1,500 ML cartridges), depending on substrate. Allow the foam to rise ½ to ¾ in. (13 to 19 mm) and set insulation in the adhesive. Walk boards into place to ensure proper embedment. For uneven surfaces it may be necessary to slit boards and apply constant weight until adhesive sets up.

2. Insulation shall be a maximum of 4x4 ft. (1.2x1.2 m) in size if adhered to substrate.

3. A min. of 1 Sarnastop placed 4 ft. (1.2 m) from the roof edge and fastened 12 in. (305 mm) o.c. to the structural deck with acceptable fasteners is required after installation of the Sarnafil roof membrane. The Sarnastop is to have a cover strip hot air welded over it.

Hot Asphalt
1. Insulation shall be set in a continuous coat of hot Type III steep asphalt. Asphalt shall be applied to acceptable substrate or properly attached vapor retarder at a minimum rate of 25 to 30 pounds per 100 sq. ft. (122-146 Kg/M²). Asphalt temperatures shall be in accordance with insulation manufacturer’s recommendation and industry standard.

2. Insulation shall be walked into place to ensure proper embedment. For uneven surfaces it may be necessary to slit boards and apply constant weight until asphalt sets up.

3. Insulation shall be fully bonded to substrate or vapor retarder.

4. Insulation shall be a maximum of 4x4 ft. (1.2x1.2 m) in size if adhered to substrate.

5. A min. of 1 Sarnastop placed 4 ft. (1.2 m) from the roof edge and fastened 12 in. (305 mm) o.c. to the structural deck with acceptable fasteners is required after installation of the Sarnafil roof membrane. The Sarnastop is to have a cover strip hot air welded over it.
Sika Sarnafil has three Mechanically-Attached Systems for Sarnafil membrane, “Sarnafast”, “Express” and “Engineered”, and two systems for Sikaplan membrane, “Sikaplan Mechanically-Attached” and “Express”. Both membranes are polyester reinforced.

Sarnafast System/Sikaplan MA are seam-attached systems. The membrane is fastened in the seam overlap along one long side of the membrane directly into the roof deck. The adjacent membrane panels are then heat-welded together with a Sarnamatic hot-air welder.

Sarnafast System
The roof membrane is marked at the factory with seam overlap lines and fastener location markings for ease of installation. Half width rolls of membrane are available for use in the critical perimeter and corner areas of the building.

**Sarnadisc–XPN**

**Sarnadisc Maxload**
Mechanically Attached Systems
In-Seam Disc Placement Details

Sikaplan MA

Sikaplan Disc
Unroll Sika Sarnafil membrane and position with a 5½ in. (14 cm) overlap for Sarnadisc, Sikaplan disc and Samadisc-XPN, and a 7 in. (17.8 cm) overlap for Sarnadisc-MAXLoad over the properly prepared substrate.

Position discs and Sarnafasteners along membrane edge on the guidelines marked on the membrane as per “In-seam disc placement details.”

Install Sarnafasteners using proper equipment so that they provide clamping of the roof membrane to the substrate without deforming the plate. You should not be able to move the disc or the screw with your foot.

Weld membrane overlaps using Sika Sarnafil approved hot-air welding equipment. Refer to HOT-AIR WELDING OF LAP AREAS section and MACHINE WELDING section for seam welding procedures.
Express System

The Express System is a seam-attached system featuring a double weld in the membrane overlap. The membrane is fastened in the seam overlap along one long side of the membrane directly into the roof deck. The adjacent membrane panels are then heat-welded together with a Sarnamatic hot-air welder equipped with a specially designed “double-weld” nozzle. A weld is created on either side of the Sarnarail.

The roof membrane is marked at the factory with seam overlap lines and fastener location markings for ease of installation. Pre-cut “half width rolls” are available for use at the perimeter and corner areas of the building.
Mechanically Attached Systems
Express System - Membrane Installation

Unroll membrane and position with a 5-½ in. (14 cm) overlap over the properly prepared substrate.

Position Sarnarail and Sarnafasteners along membrane edge on the guidelines marked on the membrane as per “In-seam disc placement details.”

Install Sarnafasteners using proper equipment so that it provides clamping of the Sarnafil membrane to the substrate.

Weld membrane overlaps using the Sarnamatic and double weld kit. Refer to HOT-AIR WELDING OF LAP AREAS section on and MACHINE WELDING section for seam welding procedures.
Mechanically Attached Systems
Perimeter and Corner Layout for Sarnafast and Express Systems

Mechanically Attached Half Sheet Layout for FM Projects

Mechanically Attached Half Sheet Layout for Non-FM Projects
Mechanically Attached Systems
Engineered System (Sarnafil membrane only)

Engineered System
The Engineered System uses a u-shaped steel bar (“Sarnabar”) that is fastened over the S327 membrane and into the roof deck or into the structural framing, effectively clamping the S327 in place. The Sarnabar is then covered with a heat-welded, narrow strip of pre-cut S327. Sarnabars are not to be installed in the seam overlap.

![Diagram of Engineered System](image)
Sarnabar and fastener spacing layout are noted in the project specifications.

Unroll Sarnafil membrane and position with a 3 in. (75 mm) overlap over the properly prepared substrate.

Weld membrane overlaps using Sika Sarnafil approved hot-air welding equipment. Note: metal tracks may be required for the automatic welder to run on to minimize wrinkles when welding.

Position Sarnabar on top of the roof membrane according to specified spacings.

Install Sarnafasteners into the holes in the Sarnabar according to specified spacings. Install Sarnafasteners into structural deck using proper equipment. Sarnafasteners are to be tight to the Sarnabar.

Leave a ¼ in. (6.4 mm) gap at the ends of the Sarnabar. Install an extra piece of roof membrane as a protection pad over the joint.
Tack weld the protection pad in place.

Hot-air weld a 8 in. (20.3 cm) coverstrip over the Sarnabar with approved hot-air welding equipment.

Refer to HOT-AIR WELDING OF LAP AREAS section and MACHINE WELDING section for seam welding procedures.
RhinoBond System

The Sika Sarnafil RhinoBond system is an alternative insulation and membrane attachment system for Sika Sarnafil membranes. The system uses the Sarnadisc RhinoBond which is a polymer coated plate used with Sarnafasteners to attach the insulation or cover boards directly to the roof deck or structural purlins. The Sika Sarnafil roof membrane is then welded to the Sarnadisc RhinoBond by induction welding.
RhinoBond System

RhinoBond Induction Tool Field Calibration

Test welds and field calibration of the induction welder tool shall be done on a daily basis, prior to any roof cover welding. The following steps shall be followed for the calibration:

a. Place five (5) plates on insulation identical to the insulation that will be used on the project. It is not necessary to use a fastener with the plate during the calibration process.
b. Cover the plates with membrane
c. Use the Induction welder at the default setting (70º) to weld the first plate
d. Place Cool & Clamp device on the assembly
e. Change the induction energy two (2) levels by depressing the “up” or “down” button twice. Typically on warmer days you go down and on cooler days go up.
f. Weld assembly number two, place Cool & Clamp device over the assembly
g. Repeat for assemblies three, four and five, increasing the induction energy two (2) levels for each trial
h. Allow assemblies to cool to ambient temperature
i. Using pliers, peel RhinoBond plate from the underside of the membrane to evaluate the bond strength. Validate correct induction energy setting based on completeness of bond and peel strength. Desired failure mode is separation of the bottom film of membrane from the reinforcement (scrim). Repeat trial process adjusting energy level up or down until desired results are achieved
j. Recalibrate the induction tool settings when ambient temperature changes more than 15 F (9 C) within a given day.

System Installation

Two RhinoBond systems are offered:

• Metal Retrofit
• Grid System (for standard roof decks)

1a. Metal Retrofit System - Fasten the insulation to the purlins using the Sarnadisc RhinoBond and Sarnafastener Purlin at the rates noted in Table 1 for the corresponding uplift approval. The insulation boards will need additional fastening to ensure a minimum of 6 fasteners per 4’ by 8’ (1.2 by 2.4 m) board. Standard insulation fastening components may be used for this fastening, rather than Sarnadisc RhinoBond.

1b. Grid System - Fasten the insulation to the substrate using the Sarnadisc RhinoBond and the appropriate Sarnafastener at the rates noted in Table 2 for the corresponding uplift approval. Plates and fasteners should be installed in a straight “grid like” pattern. See Images 1 & 2 for corner and perimeter Sarnadisc RhinoBond plate layout.
1. Weld membrane overlaps using Sarnafil approved hot-air welding equipment. Refer to HOT-AIR WELDING OF LAP AREAS section and MACHINE WELDING section on for seam welding procedures.

2. Welding of the membrane to the Sarnadisc RhinoBond shall be done with the RhinoBond induction welding tool. Center the induction welder over the center of the Sarnadisc RhinoBond +/- 1 in. (25 mm) and weld the plate to the membrane underside.

3. When the induction welding cycle is complete, immediately place a Cool & Clamp magnetic weight on the welded assembly. This device must remain in place for at least 60 seconds.

4. To test the weld you can use an ordinary plunger centered over the welded plate and pull up to check the weld.
### FIXATION FOR METAL RETROFIT

#### FASTENENER SPACINGS and WIND CLASSIFICATION

<table>
<thead>
<tr>
<th>Fastener Spacing</th>
<th>Purlin Spacing</th>
<th>FM Uplift Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 in. (152 mm)</td>
<td>5 ft (1.52 m)</td>
<td>1-210</td>
</tr>
<tr>
<td>12 in. (305 mm)</td>
<td>5 ft (1.52 m)</td>
<td>1-105</td>
</tr>
<tr>
<td>18 in. (457 mm)</td>
<td>5 ft (1.52 m)</td>
<td>1-75</td>
</tr>
<tr>
<td>6 in. (152 mm)</td>
<td>6 ft (1.83 m)</td>
<td>1-180</td>
</tr>
<tr>
<td>12 in. (305 mm)</td>
<td>6 ft (1.83 m)</td>
<td>1-90</td>
</tr>
<tr>
<td>18 in. (457 mm)</td>
<td>6 ft (1.83 m)</td>
<td>1-60</td>
</tr>
</tbody>
</table>

### FIXATION FOR GRID SYSTEM

#### FASTENENER SPACINGS and WIND CLASSIFICATION

<table>
<thead>
<tr>
<th>Max. Fastener Spacing</th>
<th>Max. Row Spacing</th>
<th>FM Uplift Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 ft (0.61 m)</td>
<td>2 ft (0.61 m)</td>
<td>1-120</td>
</tr>
<tr>
<td>2 ft (0.61 m)</td>
<td>3 ft (0.91 m)</td>
<td>1-90</td>
</tr>
</tbody>
</table>
RhinoBond System

2'x2' Insulation Fastening Grid

2'x3' Insulation Fastening Grid

Adhered System
G410 roof membrane is adhered with Sarnacol 2121, 2170, 2170 VC or 2166 adhesive to the pre-secured insulation board. The insulation boards are secured to the roof deck by either mechanical fasteners, Sarnacol Insulation adhesives, hot-asphalt or a Sika Sarnafil accepted alternative.
Adhered Systems

Sarnafil Adhered membrane – Using Sarnacol 2170 or 2170 VC Adhesive

1. Apply Sarnacol 2170 or 2170 VC adhesive to acceptable substrate and allow to dry. The adhesive shall be applied in smooth, even coats with no gaps, globs, puddles or similar inconsistencies.

2. Fold back membrane to receive adhesive. Apply Sarnacol 2170 or 2170 VC adhesive to back of membrane.

3. Wait for Sarnacol 2170 or 2170 VC adhesive to become “Tacky to the touch. (produces strings when touched with dry finger).

4. Roll membrane using a 75 lb. minimum weighted roller immediately after laying the membrane into place to insure full contact with the adhesive.
5. Weld membrane overlaps using Sarnafil approved hot-air welding equipment. Refer to HOT-AIR WELDING OF LAP AREAS section and MACHINE WELDING section for seam welding procedures.

Notes:

i. Due to an increase in viscosity when outdoor temperatures during installation are below 40º F (5º C), add ½ gal/100 ft² (0.2 l/m²) to rate for estimating purposes. Do not install when air temperature is within 5º F (-15º C) of dew point. Solvent evaporation time increases significantly when temperatures drop.

ii. The Contractor shall count the number of pails of adhesive used per area per day to verify conformance to the specified adhesive rate.

### SARNACOL 2170 and 2170 VC APPLICATION RATES FOR BARE BACK MEMBRANE

(FIELD + FLASHING)

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Membrane</th>
<th>Total</th>
<th>Adhesive Rates - Gallons/100 Ft² (Liters/Meter²)</th>
<th>Approximate Sq. Ft./Pail (meter²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isocyanurate Paper Facer</td>
<td>0.50 (0.20)</td>
<td>1.75 (0.71)</td>
<td>1.25 (0.51)</td>
<td>285 (26.48)</td>
</tr>
<tr>
<td>Smooth Plywood</td>
<td>0.50 (0.20)</td>
<td>1.50 (0.61)</td>
<td>1.00 (0.41)</td>
<td>333 (30.94)</td>
</tr>
<tr>
<td>Metal</td>
<td>0.50 (0.20)</td>
<td>1.25 (0.51)</td>
<td>0.75 (0.31)</td>
<td>400 (37.16)</td>
</tr>
<tr>
<td>Concrete Wall</td>
<td>0.50 (0.20)</td>
<td>1.75 (0.71)</td>
<td>1.25 (0.51)</td>
<td>285 (26.48)</td>
</tr>
<tr>
<td>GP Dens-Deck® Prime</td>
<td>0.50 (0.20)</td>
<td>1.50 (0.61)</td>
<td>1.00 (0.41)</td>
<td>333 (30.94)</td>
</tr>
</tbody>
</table>

### SARNACOL 2170 and 2170 VC APPLICATION RATES FOR MEMBRANE FLASHINGS USING SARNAFELT

<table>
<thead>
<tr>
<th>Adhesive Rates - Gallons/100 Ft² (Liters/Meter²)</th>
<th>Approximate Sq. Ft./Pail (meter²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substrate (1st coat)</td>
<td>Substrate (2nd coat)</td>
</tr>
<tr>
<td>Smooth Plywood</td>
<td>1.00 (0.41)</td>
</tr>
<tr>
<td>Concrete Wall</td>
<td>1.00 (0.41)</td>
</tr>
<tr>
<td>Masonry Wall</td>
<td>1.00 (0.41)</td>
</tr>
<tr>
<td>Granular Bitumen</td>
<td>1.00 (0.41)</td>
</tr>
<tr>
<td>Smooth Aged Bitumen</td>
<td>1.00 (0.41)</td>
</tr>
</tbody>
</table>
Adhered Systems
Sarnafil Adhered Membrane - Using Sarnacol 2121 Adhesive

1. Pour Sarnacol 2121 adhesive onto acceptable substrate.

2. Create “ribbons” when pouring adhesive.

3. Spread 2121 adhesive using notched squeegee. The adhesive shall be applied in smooth, even coats with no gaps, globs, puddles or similar inconsistencies.

4. Roll membrane using a 75 lb. minimum weighted roller immediately after laying the membrane into place to insure full contact with the adhesive.
5. Weld membrane overlaps using Sarnafil approved hot-air welding equipment. Refer to HOT-AIR WELDING OF LAP AREAS section and MACHINE WELDING section for seam welding procedures.

Notes:

i. Use Sarnacol 2121 adhesive for bonding Sarnafil membranes to acceptable substrates up to 2/12 slope. For slopes greater than 2/12, contact the Sika Sarnafil Technical Department.

ii. Initial set time is 24 - 72 hours or more depending on substrate, ambient temperature, and humidity. *Set up time increases due to an increase in humidity and/or a decrease in temperature. Do not install when outdoor or substrate temperatures during drying period are expected to fall below 40º F (5º C).*

iii. Newly installed areas of roofing must be protected from exposure to high winds and/or pressure from the underside. This may include edge securement and temporary ballast.

iv. Do not allow Sarnacol 2121 adhesive to skin-over or surface-dry prior to installation of membrane.

v. The Contractor shall count the number of pails of adhesive used per area per day to verify conformance to the specified adhesive rate.

### SARNACOL 2121 APPLICATION RATES FOR BARE BACK MEMBRANE

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Adhesive Rates - Gallons/100 Ft² (Liters/Meter²)</th>
<th>Approximate Sq. Ft./Pail (meter²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isocyanurate Paper Facer</td>
<td>1.50 (0.61)</td>
<td>333 (30.94)</td>
</tr>
<tr>
<td>Smooth Plywood</td>
<td>1.50 (0.61)</td>
<td>333 (30.94)</td>
</tr>
<tr>
<td>GP Dens-Deck® Prime</td>
<td>1.25 (0.51)</td>
<td>400 (37.16)</td>
</tr>
<tr>
<td>GP Dens-Deck® DuraGuard™</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Begin applying the Sarnacol 2166 adhesive onto the acceptable substrate by holding the wand approximately 18 inches (450 mm) above the surface.

2. The spatter pattern shall consist of overlapping, swirling streams that cover a width of 12 to 18 inches (305 to 450 mm).

3. Using a sweeping motion, apply the adhesive uniformly to achieve the recommended rate (below). Avoid leaving gaps between sweeps of the wand.

4. Place the membrane into the adhesive immediately.
5. Roll the membrane with using a 100 lb minimum weighted roller immediately after laying the membrane into place to insure full contact with the adhesive.

1. Apply silicone or equivalent spray to the cart's tank surface to make clean up easier. Pour Sarnacol 2166 into the tank. Pour only enough adhesive into the tank as will be needed for the membrane already laid out.

2. “Butterfly” or “Barn Door” the membrane and align the cart. Tip cart forward and begin pulling while leaving a trail of adhesive beads behind. Bead size of 1/8 to 3/16th inches wide, the coverage rate will be approximately 200-250 square feet per gallon.

3. When done applying the adhesive, place membrane into the wet adhesive immediately. Do not let the adhesive set up or cure before the membrane is installed.
4. Roll the membrane with using a 100 lb minimum weighted roller immediately after laying the membrane into place to insure full contact with the adhesive. Failure to roll membrane immediately could result in less than optimum adhesion or telegraphing of adhesive ribbons.

Notes:

I. Do not apply any adhesive to the membrane seam area. Clean any adhesive in the seam while still wet, using clean rags and Sarnasolv, DO NOT USE WATER. Do not let the adhesive set up or cure before the membrane is installed.

II. The coverage rate of the Sarnacol 2166 (see Table 1) is 200 to 250 square feet per gallon (18.5 to 23.2 (5 to 6.3 square meters/Liter). Coverage rate will vary depending on temperature and humidity conditions. Following the proper application rate there should be two 2-1/2 gal (9.4 L) empty cans of adhesive for each 10 squares (93 sqm) of roof membrane installed.

III. In cool or dry conditions, the amount of spattering air can be increased to make a finer stream that will aid cure time. With hot or humid conditions, reduce the spattering air to make a coarser pattern to increase open time.

IV. Sarnacol 2166 shall only be used when surface or ambient air temperature is 40 F (5 C) and rising. Sarnacol 2166 adhesive should be stored at 70 F (21 C) prior to use if ambient temperature is less than 60 F (15 C).

V. The Contractor shall count the number of pails of adhesive used per area per day to verify conformance to the specified adhesive rate.

### SARNACOL 2166 APPLICATION RATES FOR BARE BACK MEMBRANE

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Adhesive Rates - Gallons/100 Ft² (Liters/Meter²)</th>
<th>Total</th>
<th>Approximate Sq. Ft./Pail (meter²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isocyanurate Paper Facer</td>
<td>0.5 + 0</td>
<td>0.5</td>
<td>500 (46.5)</td>
</tr>
<tr>
<td>Isocyanurate Coated Glass</td>
<td>0.5 + 0</td>
<td>0.5</td>
<td>500 (46.5)</td>
</tr>
<tr>
<td>GP Dens-Deck® Prime</td>
<td>0.5 + 0</td>
<td>0.5</td>
<td>500 (46.5)</td>
</tr>
</tbody>
</table>

*Table 1*
General
Sarnafil feltbacked membrane may be difficult to reposition over irregular surfaces. To minimize repositioning, unroll the membrane 6 ft. (1.8 m) and line up with the lap line. Then completely unroll the membrane. Alternately, a layer of polyethylene can be unrolled prior to unrolling the Sarnafil Feltback membrane. The polyethylene will act as a slip sheet for positioning the Sarnafil Feltback membrane. Remove the polyethylene sheet after the Sarnafil Feltback membrane is in position.

1. Sarnacol 2170 and 2170 VC Adhesive
   a. Over the properly installed and prepared substrate surface, Sarnacol 2170 or 2170 VC adhesive shall be applied using solvent-resistant ¾ in. (19 mm) nap paint rollers. The adhesive shall be applied to the substrate at a rate according to Sarnafil requirements. No adhesive is applied to the back of the G410 feltback membrane. The adhesive shall be applied in smooth, even coats with no gaps, globs, puddles or similar inconsistencies. Only an area which can be completely covered in the same day’s operations shall be coated with adhesive. The first coat of adhesive shall be allowed to dry completely prior to installing a second coat of 2170 or 2170 VC.
   b. Apply the second coat of 2170 or 2170 VC the width of the membrane roll. The G410 feltback roof membrane is unrolled immediately into the second coat of wet adhesive. Adjacent to the first installed roll of membrane, another second coat of wet adhesive is applied and the second roll of membrane is immediately unrolled into it, overlapping the first roll by 3 in. (75 mm). This process is repeated throughout the roof area. Immediately after application into adhesive, each roll shall be pressed firmly in place with a water-filled, foam-covered lawn roller by rolling in both directions. **Do not allow the second application of adhesive to dry.**
   c. Weld G410 coverstrips at all G410 feltback roll ends and other seams that do not have a factory selvage edge.

Notes:
   i. Drying time increases with cooler temperatures and high humidity conditions.
   ii. The Contractor shall count the number of pails of adhesive used per area per day to verify conformance to the specified adhesive rate.
   iii. No adhesive shall be applied in seam areas.
   iv. Due to an increase in viscosity when outdoor temperatures during installation are below 40º F (5º C), add 0.5 gal/100 ft2 (0.2 l/m2) to rate for estimating purposes. Do not install when air temperature is within 5º F (-15º C) of dew point. Solvent evaporation time increases significantly when temperature drops. Ensure first coat of Sarnacol 2170 or 2170 VC is fully dry before second coat is applied for proper reactivation.
   v. Application rates will vary with substrate (see Table 2).
1. Apply Sarnacol 2170 or 2170 VC adhesive to acceptable substrate and allow to dry. The adhesive shall be applied in smooth, even coats with no gaps, globs, puddles or similar inconsistencies.

2. Apply Second coat of Sarnacol 2170 or 2170 VC over dried first coat. The adhesive shall be applied to the substrate at a rate according to Sarnafil requirements. No adhesive is applied to the back of the G410 feltback membrane. The adhesive shall be applied in smooth, even coats with no gaps, globs, puddles or similar inconsistencies.

3. G410 feltback roof membrane is immediately folded into the second coat of wet adhesive. Roll membrane using a 75 lb. minimum weighted roller immediately after laying the membrane into place to insure full contact with the adhesive.

4. Weld membrane overlaps using Sarnafil approved hot-air welding equipment. Refer to HOT-AIR WELDING OF LAP AREAS section and MACHINE WELDING section for seam welding procedures.
2. Sarnacol 2121 Adhesive

a. Over the properly installed and prepared substrate, with a maximum slope of 2 in 12*, Sarnacol 2121 adhesive shall be poured out of the pail and spread using notched ¼ x ¼ x ¼ in. (6 x 6 x 6 mm) rubber squeegees. The 2121 adhesive shall be applied at a rate according to Sarnafil requirements. No adhesive is applied to the back of the G410 feltback membrane. Do not allow adhesive to skin-over or surface-dry prior to installation of G410 feltback membrane.

b. The G410 feltback roof membrane is unrolled immediately into the wet 2121 adhesive. Adjacent rolls overlap previous rolls by 3 in. (75 mm). This process is repeated throughout the roof area. Immediately after application into adhesive, each roll shall be pressed firmly into place with a water-filled, foam-covered lawn roller by frequent rolling in two directions. Do not allow adhesive to skin-over or surface-dry prior to installation of G410 feltback membrane.

c. Weld G410 coverstrips at all G410 feltback roll ends and other seams that do not have a factory selvage edge.

Notes:

i. Use Sarnacol 2121 adhesive for bonding Sarnafil membranes to acceptable substrates up to 2/12.*

ii. The Contractor shall count the number of pails of adhesive used per area per day to verify conformance to the specified adhesive rate.

iii. Initial set time is 24 - 72 hours or more depending on substrate, ambient temperature, and humidity. Set up time increases due to an increase in humidity and/or a decrease in temperature. Sarnacol 2121 shall not be used if temperatures below 40º F (5º C) and are expected during application or subsequent drying time.

* For Slopes greater than 2 in 12 contact Sika Sarnafil’s Technical Department.
iv. Newly installed areas of roofing must be protected from exposure to high winds and/or pressure from the underside. This may include edge securement and temporary ballast.

v. No adhesive shall be applied in seams areas.

vi. The contractor shall determine the number of adhesive used per square, and shall count the number of buckets of adhesive used per area per day to verify that he is conforming to the specified adhesive rate.

vii. Application on cellular concrete will wear down the squeegee. Inspection of squeegee to maintain proper notches should be done on a daily basis.

### SARNACOL 2121 APPLICATION RATES FOR FELTBACK MEMBRANE

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Adhesive Rates - Gallons/100 Ft² (Liters/Meter²)</th>
<th>Approximate Sq. Ft./Pail (meter²)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Substrate (1st coat)</td>
<td>Substrate (2nd coat)</td>
</tr>
<tr>
<td>Isocyanurate Paper Facer</td>
<td>1.75 (0.71)</td>
<td>+ 0</td>
</tr>
<tr>
<td>Smooth Plywood</td>
<td>1.00 (0.41)</td>
<td>+ 0</td>
</tr>
<tr>
<td>Concrete Deck</td>
<td>2.00 (0.81)</td>
<td>+ 0</td>
</tr>
<tr>
<td>Cellular Concrete</td>
<td>2.00 (0.81)</td>
<td>+ 0</td>
</tr>
<tr>
<td>GP Dens-Deck®</td>
<td>1.75 (0.71)</td>
<td>+ 0</td>
</tr>
<tr>
<td>GP Dens-Deck® Prime GP Dens-Deck® DuraGuard™</td>
<td>1.50 (0.61)</td>
<td>+ 0</td>
</tr>
</tbody>
</table>

Table 3
Peel & Stick System

Sarnafil Peel & Stick system uses fiberglass reinforced G410 roof membrane with a factory applied adhesive backing and release film.

G410 Peel & Stick roof membrane is adhered directly to the pre-secured insulation board or other acceptable substrates. The insulation boards are secured to the roof deck by either mechanical fasteners, Sarnacol Insulation adhesives, hot-asphalt or a Sika Sarnafil accepted alternative.
1. Unroll adjacent rolls of Sarnafil Peel & Stick membrane over the properly prepared substrate. Position to allow a 3 in. (75 mm) overlap on the selvage edge side of the sheet.

2a. **Removing the Release Film – Option**
   Butterfly half the width of the membrane onto itself exposing the release film. Remove the release film.

2a. cont. Carefully turn down the Sarnafil Peel & Stick membrane onto the substrate insuring there are no wrinkles or creases in the sheet. Turn back the other side of the membrane and repeat the process.

2b. **Removing the Release Film – Option**
   Remove the release film from the bottom side of the membrane.

   Use caution to prevent tearing of the release liner on fastener heads and plates.
3. Roll membrane using a 75 lb. minimum weighted roller immediately after laying the membrane into place to insure full contact with the adhesive.

4. Weld membrane overlaps using Sarnafil approved hot-air welding equipment. Refer to HOT-AIR WELDING OF LAP AREAS section and MACHINE WELDING section for seam welding procedures.

Weld G410 coverstrips at all G410 Peel & Stick roll ends and other seams that do not have a factory selvage edge.
Décor Roof Systems

Sarnafil Décor Roof Systems combine the appearance of a standing seam metal roof with the watertight performance of Sarnafil’s time proven PVC membrane. Décor Roof Systems consist of Sarnafil’s G410 Feltback roofing membrane and a choice of extruded PVC Profile or Batten to achieve the standing seam appearance.

For an interactive guide to estimating and installing Décor, contact your regional office and ask for a “Décor Contractor Kit”.

The Decor Contractor Kit provides a detailed guide to estimating Décor jobs as well as an indepth video on how to install a job from start to finish.
Décor Roof Systems

General

***Special Note: Décor Roof Systems are an aesthetic roofing system. Extra time should be allowed when installing a Décor Roof System.

Applicators who have not previously installed a Décor roof are required to attend a one day Décor training seminar. In addition, a Sika Sarnafil technician must be on site for the first day of rib installation.

Working on Slopes

Steeper slopes present numerous concerns for a Décor installation. Appearance is an important feature of a Décor roof. The steeper the roof, the harder it is to achieve aesthetic objectives.

Sarnafil membranes are slippery when wet or covered with snow, frost or ice. Working on sloped surfaces under these conditions is hazardous. Appropriate safety measures must be implemented prior to working on such surfaces. Always follow OSHA and other relevant fall protection standards when working on sloped roofs.

A properly staged roof can keep foot traffic to a minimum and reduce the likely hood of slips and falls that can damage the roof. A contractor who decides to eliminate the staging and just go with harnesses may not only be putting his workers at more risk but ultimately be hurting his chances of installing a great looking roof. Workers who feel safe on the roof will be more likely to take their time and install the roof properly than to rush the job so that they can get done faster.

Wearing the proper footwear will make working on slopes safer and more comfortable. Certain slip resistant shoes or overshoes are available from a number of different suppliers. The overshoes can be put on as needed when working directly on the membrane providing the added benefit of having clean soles and not scuffing the membrane or transferring contaminants. Please see Technical Bulletin: Slippery Roof Personal Protection Equipment #02-10.

Roof Substrates

The condition of the roof deck is of utmost importance. A concrete deck which is spalled or uneven may cause the finished assembly to look uneven. Surface preparation to fill low spots or grind down high spots may be required. The same is true for steel or wood that may be loose or uneven. Thin gauge metal decking, (less than 22 gauge) can cause the finished product to look uneven and create telegraphing of the underlying substrate due to deflection. In all cases a pre-inspection of the roof deck must be conducted prior to installation to determine what remedial action, if any, should be taken.

Insulation Installation

Please refer to the “Insulation Installation” in the Insulation Attachment section for the proper installation of insulation. Note: Sarnacol LR-2001 Adhesive may not be used on slopes greater than 2/12.

It is critical that all insulation layers and cover boards be installed properly. Board joints must be butted tightly and all cut edges must be straight and even to prevent gaps. Gaps or high spots will telegraph through the membrane affecting the final appearance. When using mechanical fastening it is important not to overdrive the fasteners. It is recommended that low profile insulation plates be used on the top layer whenever possible. Low profile plates have a slight protrusion on the bottom side which will make it difficult to install flush on hard surfaces like wood. The plate can typically be used on Dens Deck when the Dens Deck is laid on top of polyisocyanurate or other relatively soft substrates. The protrusion will usually penetrate the Dens Deck.
sufficiently with normal pressure from the screw gun. When the Dens Deck is installed directly over wood or steel, it may be necessary to countersink the screw hole to allow for the metal protrusion to penetrate the Dens Deck. This can be done simply by taking the corner of the low profile plate and turning it with hand pressure to score the top of the fiberglass facer sufficiently for the plate to penetrate. Standard Sarnaplates can be used but may telegraph through the membrane more so than the low profile plate. Use 4’x8’ insulation and or cover boards where possible to reduce the amount of board joints.

When using an insulation adhesive to secure the top layer it is critical that all rising adhesive be kept away from board joints and removed from the finished surface. To avoid getting too much adhesive in the board joints, a good recommendation is to place the adhesive on the underside of the cover board before lying in place rather than applying the adhesive directly to the substrate. On sloped or uneven surfaces it may be necessary to provide temporary securement to the boards while the insulation adhesive is curing. This can usually be done by adding a few screws (which should be removed after the adhesive has cured) or by providing ballast such as pails of adhesive. Scoring the insulation or cover board facer to make the board conform better is unacceptable as this practice could lead to facer delamination and decreased wind uplift performance.

Sarnafil Membrane Installation
Please refer to the “Installation of Sarnafil Feltback Membrane” in the Adhered Systems section for general installation of membrane. Note: Sarnacol 2121 requires technical support from Sika Sarnafil’s Technical Department for slopes greater than 2/12. Contact your regional technical department.

Adhesive Application

The feltback membrane only has one selvage edge. Sheet layout will determine whether welding will be done upslope or down. See “welding membrane” section for more on this.

To achieve a consistent looking finished surface, the adhesive must be applied in a smooth even manner avoiding puddles and dry spots. Puddles of adhesive may result in blistering while dry laid areas may wrinkle or sag.

All typical temperature and weather restrictions for storage and application are the same as with any Sika Sarnafil adhered application. With a Décor system these precautions are heightened especially with adhesive application regarding blistering and condensation. Late afternoon adhesive application could result in condensation forming and resulting in poor adhesion. When the temperature is within 5 degrees of the dew point, condensation can occur and roofing should be suspended. In extreme heat, the bonding adhesives will dry quickly. It is critical that no more adhesive is applied ahead of the membrane than can be covered before drying. Dry laid membrane may not be visible right away but the use of a plunger after a reasonable drying period can help determine whether the membrane is properly adhered.

When laying out membrane, the butterfly (or barn door) method is not recommended. This method is more likely to result in over drying of the adhesive but may also leave a crease down the middle of the sheet where it was folded. By using the “back rolled method” where the membrane is pulled back lengthwise, it is easier to control adhesive drying time and will eliminate creases.

When aligning seam overlaps, it is critical to use the red line for sheet alignment rather than butting the edges of felt. As the width of the selvage edge may vary from roll to roll,
aligning on the red line may result in the felt overlapping and creating a slight high spot along the seam. This high spot should not be a concern as a rib will be positioned alongside making the felt overlap much less noticeable. If the seam alignment is done by butting the edges of the felt there will be inconsistent rib spacing. The distance of felt from the edge will vary but the red line should be very consistent.

The width of the membrane selvage edge may vary slightly and is typically wider than the weld area. It is important to apply adhesive to the back side of the selvage edge area to avoid an unadhered strip running the length of the sheet. Adhesive must be kept away from the 1.5 inch weld area.

After the membrane is laid into the adhesive it should be immediately broomed followed immediately by rolling with a 75 pound, or heavier, weighted roller. Brooming alone is not sufficient. On steep slopes the roller will need to be tied off and lowered down from above.

Ensuring that the feltback membrane is sufficiently rolled into the adhesive is one of the most important aspects to achieving a smooth looking finished product. A 75 pound minimum, weighted roller is recommended wherever practical. The weight concentrated into small, hard, steel rollers, which can move independently, works well to force the felt into the wet adhesive. It is important to take care when turning the roller to prevent wrinkling the membrane. Rollers should always be tied off for safety reasons.

Water filled, padded lawn rollers do not transfer the amount of weight per square foot that a linoleum roller can provide and will not result in proper penetration of the felt into the adhesive in some cases. Additionally, water filled rollers can be difficult to handle on slopes due to the movement of the water.

On very steep slopes or vertical applications it can be difficult to roll properly. Rolling should not be taken lightly as it is a critical component to a proper looking Décor roof. Brooming alone is not sufficient. Large, steel hand rollers as shown below can make rolling much easier and more effective when working on hard to reach areas. Rolling on vertical surfaces is dependent on sufficient hand pressure to force the felt into the adhesive.

**Welding Membrane**
To prevent blistering near the seam area, welding must be done either immediately after the sheet is adhered or waiting a minimum of 2 hours.

Welding seams on slopes can be done either upslope or down slope.
Décor Roof Systems

(left to right or right to left) must be established based on welding direction as the selvage edge is only available on one side of the sheet. When membrane is unrolled from high to low the salvage edge will be aligned for downhill welding. The sheets will have to be turned for uphill welding. If possible, you might want to consider welding uphill as downhill welding could cause strain on the Sarnamatic drive gear and premature wear. In either case a rope should be tied to the Sarnamatic for safety reasons. If welding downhill, the rope should be held by another person above the machine keeping tension on the roof to reduce tension on the drive gear.

When welding upslope it may be necessary to increase the speed beyond what would normally be used on a flat surface to prevent burning and when welding downhill it may be necessary to decrease the speed to insure a proper weld. The best approach is to first run the welder cold to see if it is capable of traveling uphill or downhill on required slope without slipping. The Sarnamatic 661 travels up steep slopes better than the 641 or 641 MC. The 641 welders may need to be pushed to insure smooth uninterrupted welding uphill.

Cleaning the Sarnamatic wheels with a solvent based cleaner will improve traction and also help to keep the membrane clean. Do not use solvent based cleaners on the exposed membrane.

Non-Sarnamatic welders can be used for seam welding with the proper adjustments. Like any other heat welded system it is important to take test cuts throughout the day or as the temperature fluctuates. With aesthetics being so critical on Décor roofs it is important to take test cuts in an area that will not be noticeable. A better solution to cutting the finished roof is to provide a small mockup of the roof assembly away from the work area. Test welds and cuts can be performed on this test mockup area to avoiding having to patch the finished roof.

Décor Rib Options

A. Décor Profile

A 1-¼ x ¾ in. (32 x 19 mm) high x 10 ft. (3.04 m) long PVC extrusion, used to simulate the appearance of a standing seam metal rib roof system.

B. Décor Batten

A 2 x 2 in. (50.8 x 50.8 mm) high x 10 ft. (3.04 m) long PVC extrusion, used to simulate the appearance of a standing seam metal batten roof system.

Either the Sarnafil Sarnamatic hot-air welder or a hand welder can be used to attach the Décor ribs to the Sarnafil Membrane. The following instructions apply to both methods.

The Décor ribs shall be installed parallel with the roof slope where possible. The top surface of Sarnafil membrane must be clean to obtain a proper weld for the Décor ribs to Sarnafil membrane and to enable positive traction for Sarnamatic welding equipment. Clean and dry the welding area of Sarnafil roof membrane. If the membrane is only slightly dirty it can be cleaned with water and a damp rag. Otherwise, a sponge or mop and a solvent-free cleaner such as Simple Green or Orange ZEP can be used. Use only solvent-free cleaners on Sarnafil Décor membranes. It is advantageous to install the Décor ribs as soon after membrane installation as possible to avoid the need for heavy cleaning.
Preparation for Installation
Pre-assemble the Décor ribs to create the required length using the plastic connectors provided. Insert a connector into the end of one Décor rib and insert the exposed portion of the connector into a second Décor rib.

Décor Profile
For the Décor Profile leave approximately ½ in. (12.7 mm) between the two pre-assembled Décor Profile sections. While kneeling down, place a hand welder between your knees with the nozzle facing away from you. Holding the Décor Profile sections on each end near the dowel, heat the ends of the Décor Profile for several seconds and firmly press the two sections together. A tack weld is sufficient to hold the sections together. Failure to weld sections together may result in separation while welding the profile to the membrane.
Décor Batten
For the Décor Batten, a membrane patch needs to be welded to the underside of the rib. After connecting the two battens together, flip the ribs on their side and heat weld a patch of Sarnafil membrane to the underneath of both ribs. After welding the patch flip the ribs back over and tack the top portions of the two ribs together. Failure to weld sections together may result in them separating while welding them onto the membrane.

Décor ribs should be installed on the top of the overlap directly next to the seam whenever possible. Do not cover the seam. This practice helps to hide the membrane overlaps.
Décor Rib Spacing

Additional intermediate rows of Décor ribs may be installed between those on the overlaps according to project specifications. Décor ribs installed on the overlaps will be spaced approximately 75 in. (1.9 m) apart. The following can be used as a guide for intermediate Décor placement to achieve the look of a metal roof:

<table>
<thead>
<tr>
<th>APPROXIMATE ON CENTER DISTANCE FOR DÉCOR PROFILES AND DÉCOR BATTENS</th>
</tr>
</thead>
<tbody>
<tr>
<td>37-½ in. (952.5 mm)</td>
</tr>
<tr>
<td>25 in. (635 mm)</td>
</tr>
<tr>
<td>18-¾ in. (476.3 mm)</td>
</tr>
</tbody>
</table>

Always measure the distance between seams to verify correct Décor rib spacing. Seam width can vary and the distance between the ribs may therefore need to be adjusted on the roof. A closer rib spacing does a better job at hiding the substrate. This is a decision based on the designer’s preference but the spacing must be done in such a manner as to allow for even spacing and ribs being positioned alongside every seam.

Once the proper spacing is determined, chalk a line to mark the correct placement of the rib. The chalk line should be adjusted from the correct “on center” spacing to account for the Décor profile flange width of 1-¼ in. (32 mm) and Décor Batten width of 4 in. (100.6 mm). The chalk line should always be made along the edge of the rib, not at the “on center” measurement. The chalk line placement will depend on the direction the Sarnamatic machine will be welding (up slope vs. down slope) as well as the direction of the membrane overlap. Some chalks, will permanently stain the membrane. Be sure to confirm that chalk can be easily removed before proceeding.

It is recommended that ribs be left short of the eaves and the peak. This is due to the difficulty in running the welder over the edge and secondly, if there is a coverstrip and edge metal at the eave, this higher plane may cause the rib to look uneven.
Décor Roof Systems
Décor Profile/Batten Spacing Layout

Décor Batten/Profile

Décor Batten/Profile Spacing Layout
The Sarnamatic can run either up or down the slope, although up the slope is recommended. Running the machine down the slope could result in premature wear on the drive gears if proper tension is not kept on the machine while welding.

Position the flange of the first rib along the chalk line. Run the rib on the right side of the of the chalk line if you are looking up the slope in order to see the chalked line while welding (left side looking up slope if you are running the machine down slope). The rib must be positioned as close to the line as possible. The rib may stick to the membrane, especially in warm weather. Therefore, do not rely on the Sarnamatic to automatically position and align the rib. Do not tack weld the rib into position as this will interfere with the Sarnamatic welding process.

Tie a safety rope securely to the machine. One worker should always hold the rope as a safety precaution (Fig. 1.5 & 1.9). The proper speed and temperature of the Sarnamatic are the same as for membrane hot-air welding. Position the Sarnamatic with guide centered on the Décor rib. Using the front guide, position the Décor rib on the chalk line or seam line.
When starting a rib weld, it is recommended that a flat piece of metal approximately 6" x 12" be placed in the weld area to allow the welder to acclimate before it contacts the PVC. This start area will need to be hand welded later. Using a flat screwdriver, lift the rib near the rear wheel and insert Sarnamatic nozzle underneath. Then immediately engage the Sarnamatic drive.

As the machine starts to move keep the guide on the chalk line or seam line. It is critical that the guide remains on the chalk or seam line. Slight variations in the machine’s direction will result in ribs that are not straight. Regularly check the guide to ensure it is tightly secured and cannot move laterally. See Fig. 1.6 & 1.7 for correct guide position. Aesthetics are critical to a satisfactory Décor installation. Allow adequate time to ensure a continuous straight line. Due to the slope of the roof, misalignment of Décor is visible from the ground.

Carefully guide the Sarnamatic during the welding process.

Stop the machine approximately 6 in. (152 mm) from the point at which the rib ends. The ribs can stretch during the welding process depending on temperature. The ribs will need to be trimmed evenly.

When welding downhill the ribs may stretch. Welding uphill may cause the rib to shrink as the weight of the welder may cause the rib to contract. This contraction or growth should not affect the appearance or performance of the membrane but may require adjustments of adding rib length or cutting back on rib length.
Stop the ribs 8 to 12 in. (203-305 mm) before the roof edge.

Once trimmed to the proper length, hand weld the last few inches of the ribs. The first few inches of the rib will also need to be hand welded. See the section on Installing Décor Using a Hand Welder.

If installing the Décor Batten, install end caps over the exposed end to give a clean finish. Insert an end cap into the Batten and tack weld the end cap in at least three places using a hand welder.

**Using a Hand Welder**

There may be situations where the rib will need to be hot-air welded by hand. This will normally occur on very steep sloped roofs (9/12+), when welding short sections of the rib, or when a Sarnamatic is not available.

Membrane preparation is the same as that described for Sarnamatic welding.

Grasp the raised portion of the rib with one hand and lift it off of the membrane enough to get the welder nozzle tip under it. Heat the membrane and the underside of the rib and then press the rib to the membrane using a rubber roller. Follow the chalk line or seam line for a straight weld. Continue in a steady, consistent manner.

Trim the Décor to the proper length as previously described, in the last section.
A tool that makes this easier is a “two headed” silicone roller which can be made with parts from two single rollers.

A method for keeping ribs straight when hand welding is to use a simple straight edge made of sheet metal as shown here.

Rib Finish
Cutting the ribs can be done with a fine toothed saw or with a Rigid pipe cutting tool as shown here.
Flashing

When flashing penetrations on sloped roofs it is important to cut the flashing membrane to account for the slope and avoid uneven flashings. An example of flashing a pipe penetration on slope is below.

Measure slope at pipe base.

Cut membrane at measured angle.

After stretching the flange, flashing is installed over base flashing. Flange is equal width all around.
Patches
When repairs are required due to punctures, cold welds, misaligned ribs etc. the repair must be made of membrane that is cut straight and extends from one rib to another. This repair method will foster the continuity of the system by keeping lines straight whether vertical or horizontal. In other words, small round patches will be very noticeable and not look like something typically seen on a metal roof. For repairs to a puncture where the feltback membrane is left in place the repair can be done with bareback membrane directly over the felt back. If the repair involves cutting out a rib or removing the feltback membrane, the void created by the removal of feltback must be filled completely with new feltback to avoid a crater. The filled space is then overlaid with bareback membrane.

Patches on a Décor roof must be wide enough to cover the surface between adjacent profiles and be no less than 6 in. (152 mm) in height.

Cleaners
Solvent based cleaners will remove the lacquer finish from the PVC membrane. When the lacquer finish is removed, a dull finish is left behind and the membrane is more susceptible to dirt pick up making these cleaned areas very obvious. Solvent based cleaners should only be used on heavily soiled membrane in seam areas or in locations that are not noticeable.

For general cleaning of lightly soiled membrane or scuff marks in the visible field of the roof, Sarnasolve or non solvent based cleaners such as Simple Green or Orange ZEP work well without removing the lacquer coating. After cleaning with these products a dry film may be left behind which should be removed with water.

Snow Guards
In snow prone areas, snow guards are recommended on sloped roof areas to prevent snow from sliding off the roof. Sika Sarnafil offers Alpine snow guards in matching membrane colors. Please consult specifications for detailed installation instructions and color options.
**Edge Metal**

Sika Sarnafil should be contacted to review wind design before edge metal selection is made. The Sarnaclad edge metal design is a common choice for Décor due to the available matching colors of the metal and membrane. When using clad metal, it is important to follow the below details as drawn.

Edge metal must be fastened sufficiently to prevent bowing and buckling. Slight irregularities in the edge metal will transfer through the membrane cover strip and take away from the proposed appearance of a metal roof. A metal cleat must be installed continuously to achieve a smooth flat appearance. There are two detail options with Sarnaclad metal, one with a metal fascia cover plate on top, the other eliminating the fascia cover plate on top by using a continuous cleat below, bent at 90 degrees.

Another option using a clad metal detail with continuous cleat that acts as a cover plate below the metal is shown. This detail has a cleaner look with less visible layering.
Night Tie In

Unprotected feltback membrane will wick and hold substantial amounts of water. It is important that the night tie in protect the edges of the feltback to prevent wicking and adhesion/welding problems.

Night tie-ins must be done in such a manner that no cutting of the sheet the next day is required. If the membrane is cut due to contaminants from tie in material, rib alignment will be off due to a shorter distance to the next seam.

One method of tie in is done by using Sika Sarnafil’s Aluminum tape and polyethylene. Tape the poly on the membrane side and use one of the urethane foam type products to embed the poly on the deck side. The aluminum tape will stick well to the membrane and leave little residue behind. Aluminum tape is only 2 inches wide and may require multiple strips to achieve more width for sufficient adhesion. Duct tape or other tapes may leave a stain on the membrane creating long term discoloration or contaminating the weld.
Walkway Installation

General

Walkways shall be provided for regular maintenance of rooftop equipment and for roof areas subject to foot traffic.

1. Sika Sarnafil walkway installation (Sarnatred and Sand Coated Walkway)
   a. Roofing membrane to receive the walkway shall be clean and dry.
   b. Important: Check all existing deck membrane seams that are to be covered and re-weld any inconsistencies before installation.
   c. Chalk lines on deck sheet to indicate location of the walkway.

   For Engineered Systems
   i. Try to run the walkway in the same direction as the Sarnabar where possible.
   ii. In areas where the walkway runs the opposite direction of the Sarnabar, stop the walkway on both sides of the bar and weld the ends. Weld a separate strip of walkway over the Sarnabar coverstrip.

   d. Apply a continuous coat of Sarnacol 2170 to the deck sheet at a rate of ¾ gallon per 100 sq. ft. (2.8L/m²). Keep adhesive back 3 in. (77 mm) from location lines. Allow adhesive to dry completely.

   e. The walkway shall be unrolled and positioned within chalk lines, then folded back on itself exposing the underside for one-half of its length.

   f. A continuous coat of Sarnacol 2170 adhesive shall be applied to the underside of the walkway at a rate of ½ gallon per 100 sq. ft. (0.2L/m²). Keep adhesive back 3 in. (77 mm) from the edge of the sheet for hot-air welding. While the adhesive is active (produces strings when touched with a dry finger), the coated walkway shall be unrolled into the previously coated deck sheet, using care to avoid wrinkles. **Do not allow adhesive to dry completely.** The amount of membrane that can be coated with adhesive before rolling into substrate will be determined by ambient temperature, humidity, and manpower (typically 2 men can coat 8-12 ft. (2.5m - 3.8m) at a time).

   g. The bonded walkway shall be pressed firmly into place with a weighted foam-covered lawn roller.

   h. The remaining unbonded half of the sheet shall be folded back and the bonding procedure repeated.

   i. Hot-air weld the perimeter of the walkway to the Sika Sarnafil deck sheet. Check all welds with a rounded screwdriver. Reweld any inconsistencies.

2. Precast concrete paver installation
   a. Install concrete pavers over a protection layer such as an extra layer of Sika Sarnafil membrane or compatible pedestals.
Walkway Installation

General

3. Crossgrip Walkway

a. Crossgrip Walkway is installed loose laid on top of completed Sarnafil roof assemblies. Unroll and position Crossgrip Walkway within specified areas and cut to desired length.

b. Connecting clips are available for butting two ends together.

c. Do not install Crossgrip Walkway directly over Sarnabars.

d. Where design wind speeds exceed 94 mph (150 km/h) the walkway must be secured with loops of Sarnafil membrane welded to the field sheet.

e. Important: Check all existing deck membrane seams that are to be covered and re-weld any inconsistencies before installation.

Typical Walkway Installation

Engineered Walkway Installation
Typical Details
Membrane Termination at Wall

Sarnafast System

Express System
Typical Details
Membrane Termination at Wall

Engineered System

Sikaplan System
Typical Details
Membrane Termination at Wall

Adhered System
Typical Details

Flashing Details

1-1

Continuous Metal Hook Strip (min. 22 gauge)
- Sarnaclad Metal Fastened 4 in. O.C., Staggered Using 1-inch Galvanized Annular Ring Nails or Other Acceptable Fastener
- Sarnafil Flashing Strip, Hot-Air Welded
- Treated Wood Nailers to Match Height of Insulation
- Sarnafil Membrane
- Insulation Securely Fastened
- Multi-Purpose Tape

Air / Vapor Barrier (as required)

Notes:
1) Nailers shall be securely anchored to the deck to resist a minimum force of 320 pounds per linear foot. Follow factory mutual loss prevention data sheet 1-49 recommendations.
2) The thickness of the nailer shall match the height of the insulation or surface to which the membrane is to be applied.
3) Vapor barrier shall be sealed at edges.

Sarnaclad Metal Edge

1-1a

Continuous Metal Hook Strip Min. 22 Gauge. Fasten Using Galvanized Annular Ring Nails. When Screws Are Used They Should Be No. 8 Min. and Penetrate Wood Nailer 3/4 in. Fasten Two Rows 1 in. from Top and 1 in. from Bottom of Hook Strip. (See Note 2)
- Sarnaclad Metal Fastened 1 in. From Back Edge at 4 in. O.C. Staggered Using Sarnafastener Screws. (See Note 2)
- Sarnafil Flashing Strip, Hot-Air Welded
- Min. 1-1/2 x 5-1/2 Douglas Fir or Southern Yellow Pine Wood Nailer. Height to Match Insulation or Surface to Which Membrane is to be Applied. (See Note 1)
- Sarnafil Membrane
- Insulation Securely Fastened
- Air / Vapor Barrier Sealed at Edges (as required)
- Multi-Purpose Tape

Notes:
1) Wood Nailers shall be attached according to the designer’s spec. or local code, whichever is more stringent.
2) Maximum “L” dimensions shall be 30 in. for T.M. 1-60, and 30 in. for T.M. 1-60 systems.
3) Woodworking resistance should be 100 lb per max. min. for Hook Strip. Annular Ring Nailers Should Penetrate 1-1/4 in. with Wood Nailers.
4) Existing wood Nailers shall be secured per factory mutual loss prevention data sheet 1-49 recommendations.
5) Follow factory mutual loss prevention data sheet 1-49 recommendations.

Sarnaclad Metal Edge – High Wind

(for wind speeds greater than or equal to 99 m.p.h.)
Typical Details
Flashing Details

1-2

1-3
Typical Details
Flashing Details

![Typical Flashing Details Diagram](image1)

1-8

![Parapet Wall Flashing Details Diagram](image2)

2-1
Typical Details
Flashing Details

---

2-3

---

3-1
Typical Details

Flashing Details

3-2

3-3

Sika Sarnafil Roofing Applicator Handbook 95
Typical Details

Flashing Details

3-4

NOTE:
1) SEALANT IS A TWO STEP APPLICATION:
   A) BEHIND TOP OF SARNAFIL FLASHING.
   B) AND AT TOP OF SARNARESLET.
   C) SEALANT SHALL BE APPLIED TO
      CLEAN ACCEPTABLE SURFACE.

2) SEALANT IS A MAINTENANCE ITEM, MAINTENANCE IS NOT COVERED UNDER THE
   SARNAFIL WARRANTY.

FLASHING AT SIDING

3-5

NOTE:
1) METAL EXTENDER PIECE IS REQUIRED IF
   EXISTING COUNTERFLASHING IS CON-
   TINUED AND OR COUNTERFLASHING IS
   LESS THAN 4 INCHES WIDE.

2) SEALANT IS A MAINTENANCE ITEM, MAINTENANCE IS NOT COVERED UNDER THE
   SARNAFIL WARRANTY.

3) VAPOR BARRIER SHALL BE SEALED AT EDGES.

THRESHOLD
Typical Details

Flashing Details

3-6a

3-6b
Typical Details
Flashing Details

4-1

4-2

Sika Sarnafil Roofing Applicator Handbook 99
Typical Details
Flashing Details

EXPANSION JOINT ON CURB WITH FOAM ROD

SARNAFLASH EXPANSION JOINT AT WALL

1) NAILERS SHALL BE SECURELY ANCHORED TO THE DECK TO RESIST A FORCE OF 300 POUNDS PER LINEAL FOOT IN ANY DIRECTION.
2) VAPOR BARRIER SHALL BE SEALLED AT EDGES.
Typical Details

Flashing Details

5-2

6-1
Typical Details

Flashing Details

![Diagram of Sarnadrain-Rac Detail](image1)

![Diagram of Thru-Wall Scupper](image2)
Typical Details

Flashing Details

CONE FLASHING AT PENETRATION

HEATED STACK FLASHING

NOTES:
1) SEALANT IS A MAINTENANCE ITEM. MAINTENANCE IS NOT COVERED UNDER SARNAFIL WARRANTY.
2) VAPOR BARRIER SHALL BE SEALED AT EDGES.
Typical Details
Flashing Details

Note:
1) Approved fastening system under base flashing not shown.
2) Sealant is a maintenance item. Maintenance is not covered under the Sarnafil warranty.

ANGLE IRON FLASHING

I - BEAM FLASHING

Sika Sarnafil Roofing Applicator Handbook 106
Typical Details
Flashing Details

Lightning Rod

NOTES:
1. Existing cable shall be cleaned free of asphalt contamination as required prior to reinstallation.
2. If asphalt contamination cannot be cleaned, Sarnafil requires a continuous layer of flashing under location of cable. Hot-air welded in place.
3. Sarnafil is not responsible for lightning damage to Sarnafil roof.
4. Vapor barrier shall be sealed at edges.

PROTECTED WOOD SLEEPER

NOTES:
1. Weight of unit to be evenly distributed over cross-sectional area of exposed wood header.
2. If weight of unit exceeds maximum allowed by insulation manufacturer, a treated wood header below the Sarnafil membrane is required.
3. Vapor barrier shall be sealed at edges.
Typical Details

Flashing Details

8-2

9-1
Typical Details

Flashing Details

10-1

10-2
All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the owner’s representative and Sika Sarnafil. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing due to incomplete flashings, the affected area shall be removed and replaced at the contractor’s expense.

1. Sarnaclad metal flashings shall be formed and installed per the contract documents.
2. The nailing flange of the Sarnaclad metal shall be a minimum of 4 in. (102 mm) in width.
3. All metal flashings shall be fastened into solid wood nailers with two rows of post galvanized flat head annular ring nails, 4 in. (102 mm) on center staggered. Fasteners shall penetrate the nailer a minimum of 1 in. (25 mm).
4. Metal shall be installed to provide adequate resistance to bending and allow for normal expansion and contraction.
5. Adjacent sheets of Sarnaclad metal shall be spaced ¼ in. (7 mm) apart. The ends of the Sarnaclad metal shall be fastened 6 in. (152 mm) on center. The joint shall be covered with 2 in. (51 mm) wide aluminum foil tape. A strip of Sarnafil flashing membrane shall be hot-air welded over the joint (see detail below).
6. When the height of a Sarnaclad metal base flashing exceeds 30 in. (762 mm), an intermediate row of grommeted fasteners shall be installed at mid-height of the flashing (see detail below).
7. Sarnaclad shall be terminated with an approved Sika Sarnafil detail. Top edge of Sarnaclad shall be secured 12 in. (305 mm) on center.
8. Exercise caution at perimeter of roof. Workers must follow OSHA safety procedures.
All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the owner’s representative and Sika Sarnafil. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing due to incomplete flashings, the affected area shall be removed and replaced at the contractor’s expense.

1. Sarnaclad metal flashings shall be formed and installed per the contract documents.

2. The nailing flange of the Sarnaclad metal shall be a minimum of 4 in. (102 mm) in width.

3. All metal flashings shall be fastened into solid wood nailers with two rows of post galvanized flat head annular ring nails, 4 in. (102 mm) on center staggered. Fasteners shall penetrate the nailer a minimum of 1 in. (25 mm). Note: hold back nails 1 in. (25 mm) from outside edge of Sarnaclad metal so that membrane and/or flashing can be welded to the Sarnaclad completely covering all nails by 1 in. (25 mm) minimum.

4. Metal shall be installed to provide adequate resistance to bending and allow for normal thermal expansion and contraction.

5. Adjacent sheets of Sarnaclad metal shall be spaced ¼ in. (7 mm) apart. Sarnaclad shall be secured at joint. The joint shall be covered with 2 in. (51 mm) wide aluminum foil tape. A 4 in. (102 mm) wide strip of Sarnafil G410 flashing membrane shall be hot air welded over the joint (see detail below).

6. 24-gauge (minimum) hook strips are required behind the Sarnaclad metal. The hook strip is to be fastened 12 in. (305 mm) on center into the wood nailer or the masonry wall. Alternatively the Sarnaclad can be face fastened with grommeted face screw fasteners.

7. Install Sarnaclad and metal hook strip in accordance with Factory Mutual’s Loss Prevention Data Sheet 1-49.

8. Exercise caution at perimeter of roof. Workers shall follow OSHA safety procedures.
Metal Flashings
Miscellaneous Metal Flashings

1. Metal details, fabrication practices and installation methods shall conform to the applicable requirements of the following.
   a. Factory Mutual Loss Prevention Data Sheet 1-49 (latest issue)
   b. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - latest issue.

2. Complete all metal work in conjunction with roofing and flashings so that a watertight condition exists daily.

3. Metal shall be installed to provide adequate resistance to bending and to allow for normal thermal expansion and contraction.

4. Metal joints shall be watertight.

5. Metal flashings shall be securely fastened into solid wood blocking. Fasteners shall penetrate the wood nailer a minimum of 1 in. (25 mm).

6. Airtight and continuous metal hook strips are required behind metal fascias. Hook strips are to be fastened 12 in. (305 mm) on center into the wood nailer or masonry wall.

7. Counter flashings shall overlap base flashings at least 4 in. (100 mm).

8. Hook strips shall extend past wood nailers over wall surfaces by 1-½ in. (38 mm) minimum and shall be securely sealed against air entry.

1. Position Sika Sarnafil membrane over roof edge and down the outside face of the wall covering wood nailer(s) completely, allowing ½ in. (13 mm) excess membrane. Hot-air weld all seams making sure there are no voids in welds.

2. Apply a 3/8 in. (10 mm) bead of Sarnafil sealant to the intersection of the right angle of the clean base rail. Install base rail from right to left as seen from rooftop, lapping joints 1 in. (25 mm).

3. Fasten base rail into the side of the nailer at 12 in. (305 mm) on center using #12 x 1-5/8 in. (42 mm) corrosion-resistant fasteners. Field cut sections as necessary. A second row of fastening may be required based upon site conditions. Exercise caution at perimeter of roof. Workers shall follow OSHA safety procedures.

4. Fascia covers are installed from right to left as seen from rooftop. Position fascia cover on top of base rail and overlap preceding panel by 1 in. (25 mm) at notches provided. Snap covers into place. Field cut where necessary. Exercise caution at perimeter of roof. Workers shall follow OSHA safety procedures.
1. Position the membrane over the roof edge and down the outside face of the wall covering the wood nailer(s) completely, allowing ½ inch (13 mm) excess membrane. Hot air weld all seams making sure there are no voids in the welds.

2. Installing anchor clips at corners and along the parapet. For wall widths 16" or less place the center of the clip 23-1/4 inches from the corner, if the walls are between 16 and 23 inches wide place the center of the clips 29-1/4” from the corner. Pull the clips snugly against the outside face. Secure each clip with 4 screws, centered in the slotted holes. Position the joint splice over the center of the clip, fastening with 2 SS ring shank nails through the aligning holes. Joint splices shall be installed at ALL clip locations. Clips shall be spaced at 40” or 60 “oc as required.

3. Installing anchor clips at wall ends. Install the first clip 2 inches from the wall end. Install the second anchor clip 24” on center from the wall end.

4. Installing corner support clips. Two support clips are to be placed at all corners to support the cap, secure the clips using 1-1/2 inch SS ring shank nails. Set each clip 3” away from each corner.

5. Installing coping miters. Hook the face of the coping miter over the outside face lag of the clips, rotate the coping miter over the top of the clips and snap the roof side leg by pressing down.

6. Installing end caps and end terminations. Install the end caps and end terms by hooking and snapping the back into place. End caps must be restrained from moving by securing the end cap to the clip using SS screw or rivet through the roof side leg of the end cap. End terms should be restrained similarly if no fasteners are previously installed in the end term wall flange.

7. Installing coping straight lengths. Always begin installing from the corners and ends, working inward to the center. Hook the front and snap the back. Allow ¼" gap between the coping sections for thermal expansion. There should be an anchor clip and joint at least every 60”oc (40” when the wall is 17-32” wide) and at every joint. Every fifth 10 ft section should be secured to the clip using a SS screw or rivet to isolate movement within a containment zone.
Overnight Tie-In
General

1. When a break in the day’s work occurs a temporary water-stop shall be con-
structed to provide a 100% watertight seal. When work on the new system is sus-
pended, the stagger of the insulation joints shall be maintained by installing partial
fillers. The new membrane shall be carried into the waterstop. The waterstop shall
be sealed to the deck and/or substrate so that water will not be allowed to travel
under the new or existing roofing. The edge of the membrane shall be sealed in a
continuous heavy application of sealant. (see detail below) *When work resumes,
the contaminated PVC membrane, insulation fillers, etc. shall be removed from the
work area and disposed of off site. None of these materials shall be used in the
new work.

2. If inclement weather occurs while a temporary waterstop is in place, the
contractor shall provide the labor necessary to monitor the situation to maintain
a watertight condition.

3. If any water is allowed to enter under the newly completed roofing, the affected
area shall be removed and replaced at the contractor’s expense.

Notes:

i. Where possible, work shall be laid out so that the tie-in is at a high spot on the
roof. Tie-in should not buck water.

ii. To seal the feltbacked edge of the Sika Sarnafil membrane, weld an 8 in. (203
mm) strip of bareback membrane to the membrane edge and seal the remain-
der of the flashing strip as described above.

iii. In a tearoff situation, it may be necessary to seal the new roof system to the
deck and to the existing roofing.

*Depending on substrates, the following sealants are options for temporary overnight
Tie-ins, Type III hot asphalt conforming to ASTM D312 (latest revision), Sarnafiller,
multiple layers of roofing cement and felt, spray applied, water resistant urethane
foam, mechanical attachment with rigid bars and compressed sealant.
On a tear-off situation, Sika Sarnafil recommends that the entire existing roofing and insulation be torn off prior to the installation of any Sika Sarnafil where possible.

A temporary roof should be installed over the prepared deck surface. Sika Sarnafil recommends two-ply of 15 pound asphalt felts with a glaze coat, or a 43 pound base sheet with proper laps and glaze coat be used as a temporary roof. This temporary roof will also act as a vapor retarder. On a corrugated steel deck a layer of insulation should be mechanically fastened to the steel deck, and a temporary roof applied over the insulation. On certain applications the owner may not allow a temporary roof to be installed and the job must be done with a daily tear-off and replacement.

**Precautions and Recommendations**

1. The contractor may want to make a roof plan with building heights for the total job during the pre-job walk. Also locate on the plan the proper job-start location, dumpster locations, and expected prevailing winds.

2. Locate dumpsters to minimize traffic over the completed roof areas. Start tear-off on the highest roof, if there are various heights, to eliminate contamination from high roof areas. Start tear-off upwind of prevailing winds. Take roof drainage into consideration.

3. Contractor should cover installed Sika Sarnafil membrane with asphalt-free tarpaulins or a large sheet of polyethylene for approximately 15-20 ft. (4.6 m - 6.1 m) along the tear-off area to minimize asphalt contamination.

4. Contractor may want to build up some type of wind dam at the transition from the new Sika Sarnafil membrane to the tear-off area to minimize asphalt contamination.

5. Contractor should have a hose available to wash dust off the newly installed Sarnafil roof daily.

6. Contractor should have soft, clean bristle brushes to sweep asphalt dust off the new membrane. If the membrane is warm, this may spread the contamination source.

7. Everyone working on the roof should take precautions to minimize asphalt contamination. The general contractor should inform all trades.

8. Crew members should have asphalt-free shoes, clothes, and tools when working on the membrane.

9. Contractor should plan to clean the contamination from the top surface of the Sika Sarnafil membrane daily. If heavy areas of contamination are left in place for a long period of time, the contaminated membrane may be required to be cut out and patched. The contractor should have Sarnasolv and plenty of clean cotton rags on-site.

10. If large areas of asphalt contamination occur on the top surface of the Sika Sarnafil membrane, the contractor should plan to clean the entire contaminated area with power floor scrubbers with soft clean bristles and acceptable cleaner and water. All asphalt contamination on the top surface of the Sika Sarnafil is to be removed.

11. All asphalt contamination below the Sika Sarnafil membrane, normally visible by a browning of the membrane, is to be removed. The membrane is to be cut open, the insulation or substrate cleaned with the contamination source completely removed, and a patch installed in a neat fashion. The existing membrane is to be cleaned with an approved solvent prior to welding. In areas of localized contamination, try to utilize large replacement sheets of Sika Sarnafil membrane to minimize the number of patches.
**Special Instructions**

**Cleaning Sarnafil Membrane**

**Airborne Dirt**

1. Sponge, mop, or brush cleaning is the least aggressive method of cleaning. This works well on new material and is typically used in smaller areas. Apply water and a non-abrasive cleaner to the area and sponge, mop, or brush off. Wire brushes should never be used as they scratch the material and may cause punctures in the membrane.

2. When using a rotary buffer to clean the roof, be sure to use a small buffer with a 12 - 15 in. (305 - 381 mm) base. Use only the synthetic buffing pad or polishing pad, as stripping pads are too aggressive and will damage the membrane.

3. Pressure washing can be used on larger buildings for cleaning. There are a large variety of machines available and they are all calibrated differently. Some machines don’t allow you to dial in a pressure. A lower pressure is preferable. Using too high a pressure will cut right into or through the membrane causing leaks and possibly damage other components of the roof system, and possibly the structure. A wide dispersal nozzle should also be used. Narrow dispersal nozzles will create too fine a spray and can damage the membrane. The wand itself should be kept at a constant 16 – 24 in. (406 - 610 mm) above the membrane. Lowering the wand in an effort to concentrate the spray can damage the membrane.

Notes:
Seams should be washed by hand, as water could be sprayed up under a seam. On large roofing projects this may be difficult. If using a pressure washer wash from the field sheet over the overlap and not the other way around. Washing against the overlap could damage the edge of the material or cause problems with the weld.

As with any cleaning process using a small test area and some common sense should lead to the desired results.

**Asphalt or Coal Tar Pitch**

Asphalt and coal tar pitch can be removed from the top of Sika Sarnafil membranes by applying Sarnasolv, Mineral Spirits, or Lestoil onto a clean, soft cotton rag, and wiping thoroughly until the asphalt is removed. Solvents should not be poured directly on to the Sika Sarnafil membrane, and any spills should be wiped up immediately. If large areas of roofing are to be cleaned, automatic equipment such as floor scrubbers with soft brushes, with mild detergents are acceptable. Check with the Sika Sarnafil Technical Department. For removing imbedded dirt or moisture which cannot be removed by Sarnasolv, Mineral Spirits or Lestoil, use Methyl Ethyl Ketone (MEK). MEK should be applied onto a clean, soft cotton rag and wiped thoroughly until the contamination is removed. Workers should use proper precautions when using MEK. MEK should not be poured directly on the Sika Sarnafil membrane, and any spills should be wiped up immediately. Completely hose down the area clean. Consult the Sika Sarnafil Technical Department for cleaning Sarnafil membranes of other contaminants.

Note: MEK will remove the acrylic coating from Sika Sarnafil membranes.
Special Instructions
Welding Membranes Greater Than 60 mils Thick

Welding Sika Sarnafil Membranes Greater Than 0.06 In. (60 Mils) Thick

A 4 in. (102 mm) patch of 48 mil (1.2 mm) G410 must be welded over each T-joint. Either a round patch or a square patch with rounded corners is acceptable as long as the patch is centered above the T-joint intersection. Precut 4 in. (102 mm) round patches are available.

Welding To Aged Sika Sarnafil Membrane

Clean the existing membrane of heavy dirt in the areas of welding with household liquid soap and water using clean, soft cotton rags or soft cotton mops. Do not use abrasive cleaners.

To remove embedded dirt and moisture use Methyl Ketone (MEK) applied to a clean, soft cotton rag. Wipe the rag thoroughly over the prepared area until the membrane is clean. Workers should use proper precautions when using MEK. MEK should not be poured directly onto the Sika Sarnafil membrane, and any spills should be wiped up immediately.

Allow the MEK to completely evaporate. Weld slowly and with reduced heat.

Hand Welding

The preliminary weld should be a continuous weld.

Complete the final weld. Weld slowly.

Create an uninterrupted flow of gray material from the edge of the completed joint.

Machine Welding

Visible evidence that welding is proceeding acceptably is smoke during the welding operation, shiny membrane surfaces, and an uninterrupted flow of dark gray material from the edges of the completed joints.

All completed welded seams shall be checked after cooling for continuity using a rounded screwdriver or other suitable blunt object by the roofing contractor.

Two inch (50.8 mm) cross-sectional test samples shall be taken through completed seams. Correct welds display failure from shearing of the membrane prior to separation of the weld.
General

Problem: Voids in the welded seams.
Solution: Check all seams daily for voids using a rounded screwdriver. Open void along seam to a solid weld. Solvent clean the area and reweld or patch.

Problem: Punctures in the membrane.
Solution: Inspect the membrane for punctures. Solvent clean the area punctured and handweld a patch in place.

Problem: Contaminates on the membrane.
Solution: Inspect the membrane for contamination. Clean the contaminated area with approved solvents using clean, cotton rags.

Problem: Contaminates under the membrane.
Solution: Cut out the contaminant and clean the membrane to receive the patch with an acceptable solvent. Weld patch in place.

Problem: Debris on the membrane.
Solution: Sweep the membrane free of all debris with a soft bristle broom.

Problem: Unadhered flashing areas.
Solution: Cut open all unadhered flashings and fold back until fully adhered. Apply Sarnacol 2170 to the substrate and let dry. Apply Sarnacol 2170 to the underside of the flashing at a rate of ½ gallon per 100 sq. ft. (0.2L/m²). Apply flashing into the previously coated area while the adhesive on the underside of the flashing is tacky to the touch. Do not let the adhesive completely dry. Rub in the flashing to ensure full adhesion. Clean the membrane in areas to be welded with an approved solvent. Weld a patch strip over the cuts in the flashing membrane. Check all welds. Note: If large areas of the flashing are unadhered, remove the entire flashing and adhere new flashing material.

Problem: No termination of Sika Sarnafil flashings at non-removable curbs.
Solution: Install a metal extender piece on all non-removable curbs. Secure with grommeted fasteners 12 in. (305 mm) on center.

Problem: No vertical termination of Sarnafil flashing.
Solution: Terminate all vertical flashings with metal, sealant, and grommeted fasteners 12 in. (305 mm) on center.

Problem: No sealant at details.
Solution: Apply an acceptable (compatible) sealant to the drains, vent stacks, reglets, etc. All surfaces to receive the sealant must be cleaned.

Problem: No hose clamps on vent stacks or other round penetrations.
Solution: Install stainless steel hose clamp and multi-purpose sealant.

Problem: Loose insulation.
Solution: Secure all loose insulation panels with acceptable fasteners and plates. Clean the membrane around the plates with an acceptable solvent. Hand weld a patch in place. Check all seams with a rounded screwdriver.
Problem/Solution Q&A
Adhered And Décor Systems

Problem: Blisters in the membrane.
Solution: Caused by excessive amounts of adhesive (adhesive spill, etc.) or not letting the adhesive dry enough on the back of the Sarnafil membrane. Cut out and install a patch.

Problem: Contaminates under the membrane:
Solution: Cut out and remove the contamine and clean the membrane to receive the patch with an acceptable solvent. Adhere the patch and hand weld it in place.

Problem: Unadhered areas.
Solution: Cut the membrane and pull back until fully adhered to the substrate. Apply Sarnacol 2170 to the substrate according to specified coverage rates and let dry. Apply Sarnacol 2170 to the existing membrane or new membrane at a rate of a ½ gallon per square (.2L/m2). Roll the membrane to the primed substrate. Immediately apply a silicone hand roller or weighted foam-covered lawn roller over the prepared area to ensure full adhesion. Clean the membrane to receive the patch with an acceptable solvent and hand weld it in place.

Problem: No 4 ft. (1.2 m) perimeter bar (generally required when insulation is set to hot asphalt or cold adhesive).
Solution: Secure the Sarnabar with an acceptable fastener 12 in. (305 mm) on center. Clean the existing Sika Sarnafil membrane on both sides of the Sarnabar and weld a 8 in. (203 mm) coverstrip in place.
<table>
<thead>
<tr>
<th>TYPE OF BLISTER FORMATION</th>
<th>FEATURES</th>
<th>CAUSES</th>
<th>RECOMMENDATIONS FOR HAND AND AUTOMATIC WELDING</th>
<th>MEASURES TO PREVENT BLISTERS</th>
</tr>
</thead>
</table>
| Blister formation due to moisture in membrane | Blisters of consistent 2-5 mm (.08 - .2 in.) diameter | Storage of membrane:  
- in water  
- in humid conditions | - Expose affected areas and allow membrane to dry in the sun  
- Use MEK  
- Slow welding at temperatures which are as low as possible  
- Two preliminary welds; the second weld must be tight  
- For automatic welding, weld slowly, use trailing roller continuously | - Store membrane under dry conditions on pallets and completely cover with canvas tarpaulins  
- At high humidity, weld the Sarnafil immediately after laying  
- Do not damage packaging  
- Storage time on the building site should be minimized |
| Blister formation due to solvents | Blisters of irregular diameters | Solvents in membrane due to:  
- cleaning with solvents  
- adhesive solvents which have not evaporated | - When cleaning with solvents, weld immediately or wait 2-4 hours before welding  
- In the case of adhesive solvents, weld immediately or wait 2-4 hours before welding | - Use solvents sparingly  
- For cleaning use recommended cleaners |

By following these principles satisfactory welding of Sika Sarnafil Membranes can be achieved.
General Information
Sika Sarnafil Single-ply Membranes

General Comments for Use
Sika Sarnafil membranes are defined as “Articles” and are therefore exempt from the requirements of the OSHA Hazard Communication Standard (29CFR 1910).

This information sheet is provided as a guide and cannot be considered all inclusive or absolute. Heat sealing, and other heat applications, may subject personnel to potentially hazardous situations, particularly in closed or confined areas.

The safety of every roofing mechanic on all jobs should always be ensured. It is the responsibility of the management of the roofing company to educate and inform its employees in the particular precautions and safety measures which should be observed at the job site.

Disclaimer
This information and recommendations contained herein are offered as a service to our customers and are not intended to relieve the user from responsibility. The information and recommendations provided are believed by Sika Sarnafil to be accurate at the time of preparation, or obtained from sources believed to be generally reliable. Sika Sarnafil makes no warranty concerning their accuracy and will not be liable for claims relating to any use regardless of whether it is claimed that the information or recommendations are inaccurate, incomplete, or otherwise misleading.
Sika – Your Local Partner with a Global Presence

Sika is a global active company in the specialty and construction chemicals business. It has subsidiary manufacturing, sales and technical support facilities in over 70 countries around the world.

Sika is THE global market and technology leader in waterproofing, sealing, bonding, dampening, strengthening and protection of buildings and civil engineering structures.

Sika has more than 10,000 employees worldwide and is therefore ideally positioned to support the success of its customers.